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BULLETIN *School of Medicine* *University of Maryland*

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Editorial

The "Innocent" *E. Coli*

How OFTEN in the past did one tend to dismiss the finding of *Eschericia Coli* in the stool culture of a neonate with fulminant diarrhea as "normal flora!" How frequently did epidemics of gastro-enteritis spread like a brush fire through a nursery despite very careful technique leaving in its wake considerable morbidity and mortality. Today we are aware that certain serological types of this previously believed "innocent" fecal *E. coli* are potentially dangerous pathogens, particularly in the very young.

As early as 1927, Adam found *E. coli* strains associated with infantile diarrhea, and again in 1945, Bray recovered a serological *E. coli* type in 95% of infantile diarrhea and postulated its pathogenicity.¹ Today we are aware of 11 serotypes of *E. coli* believed to be associated with diarrhea, particularly infantile, and possibly with bacteriological involvement of other organ systems.

A 23% incidence of infantile diarrhea associated with pathogenic *E. coli* isolated in stool cultures was described by Stulberg and Zuelzer.² Cooper found that 92% of the children with fecal pathogenic *E. coli* had overt symptoms of diarrhea.³ Is this an incidental finding or a bacterial overgrowth? Can we be sure that these serological types are pathogenic for man according to Koch's postulates? Ferguson, by means of infant feeding experiments, found that symptoms similar to those of natural infection were produced.⁴ Thompson demonstrated that comparable doses of normal fecal *E. coli* produced no such effect.

The age incidence of pathogenic *E. coli* as a cause of diarrhea reveals it to be a declining manifestation with age increase. Cooper found 77% pathogenic *E. coli* discovered were in the first year of life and 40% in the first three months. Thompson believes that pathogenic *E. coli* come and go as part of the normal adult intestinal flora and at any one time about 1-2% of the population are excreting them.⁵ It is, therefore, reasonable to presume that contact with maternal feces during the birth

process introduces the potential pathogen into the nursery area where the significance of this organism appears paramount.

Pathogenic *E. coli* will often infect infant after infant frustrating the most meticulous nursery care. This very high degree of infectivity requires the very early suspicion and recognition of the organism's presence.

The peak monthly incidence is October and November. The usual manifestations of severe pathogenic coliform diarrhea appears to be frequent mucoid, greenish stools, rapid dehydration, marked toxicity, and occasional pronounced temperature elevation.

Enteropathogenic *E. coli* have been found associated with pyelitis, septicemia, and as an enteritis which initially presented the appearance of an acute surgical abdomen. Thus other organ involvement and referable symptomatology must be kept in mind when dealing with this organism.

Oral Neomycin has been found the most effective agent in ridding the gastrointestinal tract of pathogenic *E. coli*. Doses of 50 mgm./kg./day orally have proven consistently effective.^{6,7}

In the young child with fulminant diarrhea, it often behooves one to consider the *E. coli* in the stool culture guilty until proven "innocent."

MURRAY KAPPELMAN, M.D.

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The Effect of Hemorrhagic Shock upon Succinic Oxidation in Dog Liver and Brain Slices

R. W. BUXTON, M.D., B. W. HAINES, Sc.D.,* and M. MICHAELIS, Ph.D.

THERE ARE SEVERAL approaches to an understanding of the significance of the role of enzymes in body metabolism. One approach is to assay enzyme activities in one organ in the normal animal and to try then to deduce their place in the known pattern of metabolic steps within the cell or organ. Such an analysis can be supplemented by a partial or complete reconstruction of the components of enzyme systems *in vitro*, including their inhibitors. Another approach is to note the change and the magnitude of this change in enzyme activity in tissues when the whole animal has undergone defined change. Shock provides one of the methods by which controlled change can be inflicted. The changes detected under such circumstances are due to the damage inflicted and may be considered relevant to the ensuing pathologic syndrome.

To understand the drastic changes which result from hemorrhagic shock the generalization has been made often that they are concomitant with, and possibly the result of, deprivation of cells of their oxidative enzymes. A disturbance of oxidative phosphorylation in mitochondria of heart, liver, and brain after hemorrhagic, tourniquet, and Noble-

Collip drum shock has been reported.^{5, 7} In the view of present evidence, it appears difficult to make clear-cut conclusions as to the role of respiratory enzymes in shock.

Usually enzyme activity is determined in the serum of experimental animals or of patients and less often in excised organs. The observed changes in these activities are mostly increases, when measured in the serum³ and have been reported also as increases in tissues in different types of shock, *e.g.*, enzyme activity as measured by oxygen uptake of liver slices in burn shock in rats¹ and an increase in oxygen uptake in rat brain tissue after freezing shock.⁴ In hemorrhagic shock, in dogs, destruction of cozymase and alloxzine dinucleotide in excised organs has been shown.²

The experiments reported here were undertaken to assess the influence of shock on one member of the cellular respiratory enzyme system, succinic oxidase, in liver and brain slices of dogs in irreversible hemorrhagic shock.

Methods and Materials

Animals and Operation. Healthy mongrel dogs averaging 12.8 and ranging 8.6 to 20.4 kilograms in weight were subjected to hemorrhagic shock using the elevated reservoir technique (Fig. 1). In all experiments, aseptic technique was observed. One hour prior to hemorrhage

* Present address: Department of Biomathematics, Fort Detrick, Md.

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From the Division of Experimental Surgery, School of Medicine, University of Maryland, Baltimore, Md.

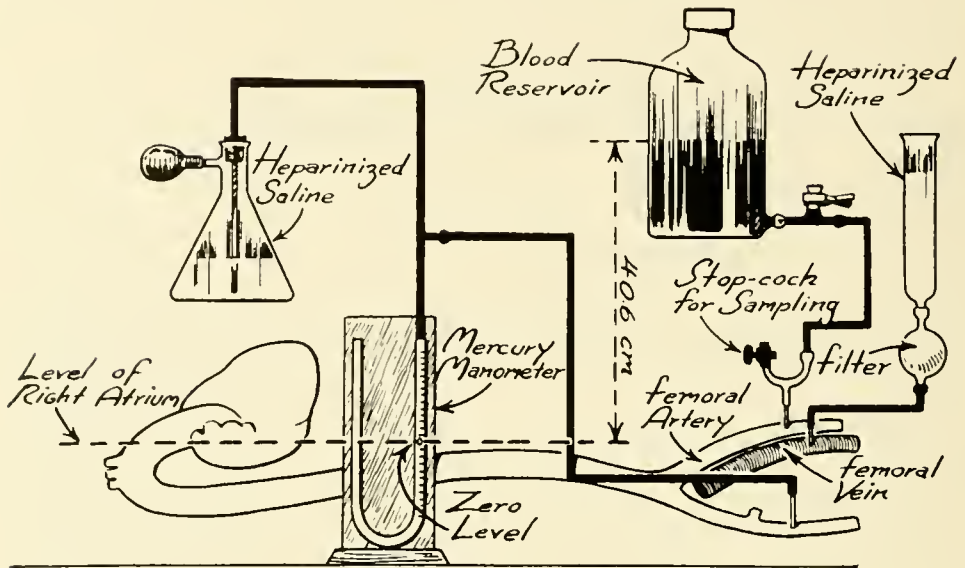


Fig. 1

each animal was narcotized with a standard intramuscular dose of morphine sulfate. The femoral vein and corresponding artery in one groin was cannulated under anesthesia by local infiltration. The opposite femoral artery was cannulated in like manner and this catheter attached to a mercury manometer. All animals were given 2 mg./kg. of aqueous heparin. A slow drip of normal saline from a graduated cylinder into the femoral vein cannula insured patency to that system. Bleeding into the elevated reservoir was accomplished via the femoral artery cannula. The reservoir was elevated to a height so as to maintain the animals' arterial pressure at 30 mm. of mercury. An average maximum bleed-out volume from the dogs studied (46 ml./kg. body weight) was reached usually within one hour of the initiation of hemorrhage. After the maximum bleed-out was reached, the animals were allowed to take up, upon demand, 40% of the shed blood from the reservoir always maintaining the systolic pressure at a constant (30 mm. Hg.)

level. The remaining blood was then rapidly reinfused through the venous cannula, so as to restore the total blood volume to its pre-hemorrhage normal. The average time for 40% spontaneous uptake in these experiments was five hours. Rapid venous reinfusion of reservoir blood resulted in temporary rise of arterial blood pressure to a mean of 100 mm. of mercury. Thereafter, the arterial pressure fell again to shock levels with death occurring generally within an average of 2.4 hours of reinfusion.

Sampling Operation. 1. Before the initiation of hemorrhage, in one group of animals, the abdomen was opened under local anesthesia and a generous segment of the right lobe of the liver was removed, the liver wound being closed carefully with mattress sutures of black silk. A second liver biopsy, taken usually from the opposite liver lobe, was obtained near the termination of the experiment when the animals' pressure after reinfusion had fallen to below 30 mm. Hg. but prior to death.

2. In a second group of animals a scalp flap was turned in one parietal area, again under local anesthesia, and a portion of the cerebral cortex removed. Hemostasis was obtained with gelfoam pledgets. A second cortical biopsy was removed, from the opposite cortex, when the subject's blood pressure had fallen to the 30 mm. Hg. level or below, but prior to actual death.

Sham Operation. The animal was operated upon as usual but no blood was withdrawn. The blood pressure was observed and after six hours on the operation table a second biopsy was taken.

The Warburg Technique was employed and the oxygen uptake for liver and brain slices, with and without succinate added to the specimen as a substrate, was measured for each animal before and after shock and in a second set of experiments for each animal before and after sham operation. Each Warburg vessel contained Krebs Ringer Phosphate as a buffer medium with sodium succinate as the substrate for a final concentration 0.1 to 0.05 M in the sidearm where indicated. The substrate was tipped from the sidearm into the main compartment after 15 minutes had elapsed for thermal equilibrium. The temperature of the water bath was kept constantly at 37°. The atmosphere was air. Filter paper soaked with potassium hydroxide was placed in the center well and served for absorption of carbon dioxide. The manometers were read for one or two hours every 10 or 15 minutes. After completion of the manometric tests, the slices were washed and dried at 110° to constant weight. In some cases the nitrogen content of the dried slices was determined by a Micro-Kjeldahl method. The activities were recorded as microliters of oxygen consumed per

mg. of dry weight per hour, (Q_{O_2}) or per mg. of nitrogen ($Q_{O_2}^N$).

Results. In each set of experiments discussed here there were n animals used. The experiments were designed so that each animal provided information on all four possible combinations of the two treatments. When, for any one set, the n results of any treatment combination are totaled, this total is represented by the appropriate combination of the letters.

Both $Q_{O_2}^N$ and Q_{O_2} values were averaged and the results were computed according to the formulae:

$$\bar{S} = \frac{SN + ST}{2n} - \frac{BN + BT}{2n}$$

$$\bar{T} = \frac{ST + BT}{2n} - \frac{SN + BN}{2n}$$

S = succinate added

B = (blank) succinate not added

T = (trauma) hemorrhagic shock,
sham or real as the case may be.

N = (normal) no hemorrhagic shock.

The data thus combined show estimates of the main effect on tissue slices of adding succinate (\bar{S}) and of subjecting the animals to hemorrhagic shock (\bar{T}). The data (Table 1) show that shock has the effect of significantly reducing both the Q_{O_2} values and the $Q_{O_2}^N$ values from dog liver slices. The magnitude of this reduction, about 13% for Q_{O_2} and 18% for $Q_{O_2}^N$, is apparently not influenced by the presence or absence of succinate. Similarly in these two experiments, the addition of succinate caused a significant increase in the rate of oxygen uptake in tissue slices. This increase is measured as 35% Q_{O_2} and 38% for $Q_{O_2}^N$. Although both shock and the addition of substrate produced significant changes in the rate of O_2 uptake, these two treatments acted

Table No. 1. Effect of Hemorrhagic Shock upon Succinate Oxidation Dog Liver Slices Warburg Technique Temp. 37° C.

Number of Animals	Treatment		Measure	Standard Error of Main Effects	Average		Main Effect of T	P	Average		Main Effect of S	P
					without T	with T			without S	with S		
	T	S										
10	shock	succ.	QO ₂	0.08	2.13	1.86	-0.27(13%)	0.02	1.70	2.29	+0.59(35%)	<0.01
10	shock	succ.	Q ^N O ₂	0.56	18.51	15.26	-3.25(18%)	<0.01	14.17	19.60	+5.43(38%)	<0.01
5	sham	succ.	QO ₂	0.20	2.22	2.45	+0.23(10%)	0.046	1.50	3.16	+1.66(111%)	<0.01
6	sham	succ.	Q ^N O ₂	1.57	17.33	20.37	+3.04(18%)	0.19	12.87	24.84	+11.97(93%)	<0.01

independently from one another. Thus the shock reduced the oxygen uptake by the same amount, whether or not succinate was added, and the succinate increased the oxygen uptake the same amount in tissues from shocked dogs when compared with tissues from normal dogs.

The experiments involving sham shock show that this treatment itself caused no significant change in the rate of oxygen uptake. They did indicate, however, that the effect of the sham operation on biologic oxidation may be different when succinate is absent than when it is present. Statistically, this difference is significant at the 5% level ($P=0.046$). This margin of significance is so slight and the results are based on so few observations (five animals) that the authors consider them to be inconclusive.

Discussion

These data show that the basic oxygen uptake rate of liver slices from dogs which have undergone hemorrhagic shock, when measured as succinic oxidase activity, is decreased whether or not an additional amount of substrate (succinate) is added. No such decrease is apparent after the sham operation. Hence the change in oxidative capacity when measured in this parameter is to be ascribed to the hemorrhagic shock and not to mild stress without withdrawal of blood.

It appears that succinic oxidation undergoes damage in irreversible hemorrhagic shock. Russell, Long, and Wilhelm⁶ compared the succinate oxidation in liver slices from rats in hemorrhagic shock and found the succinate effect dependent upon the concentration of the substrate. We did not observe such differences with final concentrations of substrate varying from 0.1M to 0.05M. This may possibly be due to the greater "integrity" of our dog liver slices during severe shock, in comparison with rat liver slices. An overall decrease of the succinate oxidase system in dog liver slices was noted.

Table No. 2. Dog Brain Cortex Slices, Succinic Oxidase

No. of Observations	BN	SN	BT	ST
	20	19	9	9
QO ₂	3.8	4.7	3.2	3.6

In order to indicate further the effect of hemorrhagic shock upon other tissues of major importance to the body, there is appended Table 2 of QO₂ values for brain slices from dogs. The tests were done like those with liver slices. From this table it is seen that although the observed differences were statistically not significant, their direction trend was the same as those significant differences described with liver slices.

Quite often increases in cellular enzyme concentration are seen in blood, in numerous pathological stages. This may point to the possibility that in irreversible hemorrhagic shock, enzymes may be lost from their normal sites within cells and are discharged into the blood stream. Experiments to test this possibility are underway.

Conclusion

In acute hemorrhagic shock in dogs the oxygen uptake in liver slices when measured as succinic oxidase activity is reduced significantly.

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A New Portable Defibrillator Above Sixty Cycles

A Preliminary Report

**MORRIS TISCHLER, SAFUH ATTAR, M.D., AVRUM TAMRES,
and R. ADAMS COWLEY, M.D.**

THE OBJECT of this report is to describe a new type of electronic square wave defibrillator functioning effectively at frequencies between 150 and 250 cycles per second.

This portable defibrillator operates from a 24 volt rechargeable battery. It has a self-contained trickle charger and timer control. The power output is 400 watts with a square wave pattern. The instrument case measures $9 \times 9 \times 13$ inches and includes a cardiac pacer¹ (Fig. 1). Both defibrillator and pacemaker are combined and function from the same battery supply. A single switch is used to charge the battery and place the unit on the "standby" defibrillator position. The ON-OFF operation control is a footswitch activated timer with an "ON" duration of 0.1 seconds. Standard disc electrodes have been used. A new glove electrode is being designed. (Fig. 1.)

The design and construction of the above instrument was determined by the objectives set forth as follows:

- (a) To determine if different frequencies and wave patterns might be more effective in defibrillation than the standard 60 cycle sine wave pattern.

- (b) To determine what power requirements would be necessary.
- (c) To determine the most effective pulse (shock) time.
- (d) To construct a compact, portable, completely self-contained and reliable battery operated instrument for both internal and external use.

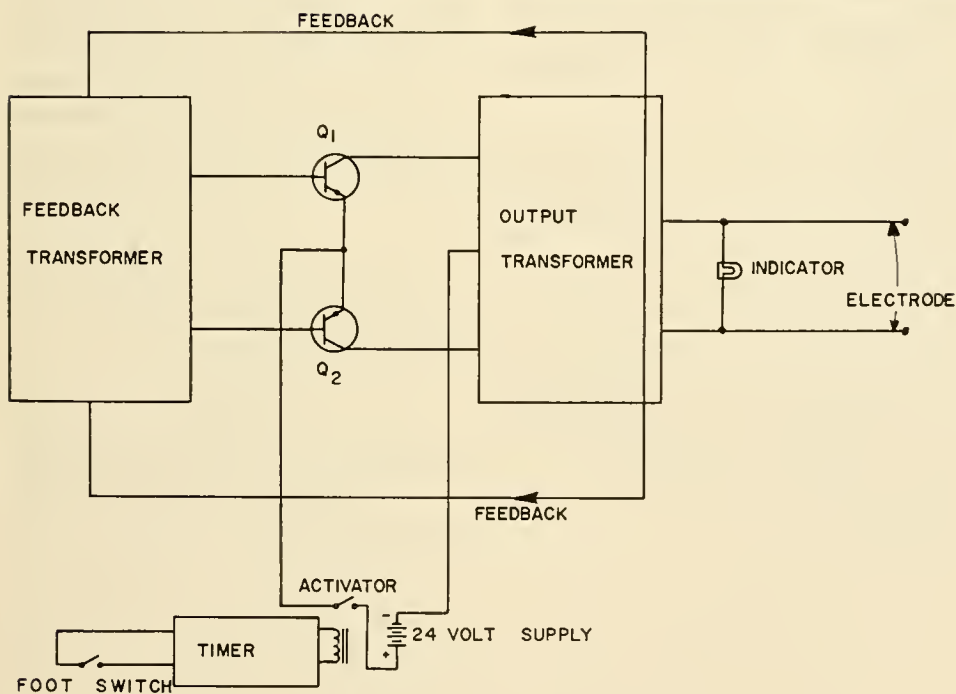
Several instruments were constructed and tested, the first units being made to operate on frequencies below 60 cps. Experimental studies on normothermic dogs revealed that low frequencies of 30 to 60 cps. with a square wave pattern invariably needed multiple pulsations with pulse widths up to 0.2 seconds in order to achieve defibrillation. As the frequencies were increased from 60-250 cps., successful defibrillation was achieved with fewer pulses and shorter pulse widths. The most effective frequency range was found to be between 150 and 250 cps. Higher frequencies were tried (300-400 cps.) and they proved to be no more effective than the lower ranges of 30-60 cps.

The selection of a square wave frequency of 250 cps. was not only important in terms of effective defibrillation, but also in terms of equipment size and operating efficiency. Since an increase in power conversion efficiency occurs at this higher frequency an extended battery life time results.

Aided by research grant H-4595 from the U. S. Public Health Service.

From the Department of Surgery, Division of Thoracic Surgery, University of Maryland, Baltimore.

Fig. 1. This small unit contains all essential components for cardiac resuscitation. Size 9 x 9 x 13 inches.



DEFIBRILLATOR BLOCK DIAGRAM

Fig. 2. This diagram is self-explanatory.

The block diagram in Fig. 2 illustrates how the instrument functions. The unit is basically a DC to AC converter using the two transformer design. The drive transformer is of square iron while the output is of silicon iron. The output transformer is capable of 2KVA. The frequency range is variable in steps from 100 cycles to 1000 cycles. A modified unit operates down to 40 cycles. The supply voltage is raised to 28 volts since it is more efficient to switch higher voltages than higher currents. The experimental instrument now in use is found to be very stable and operates at a power output of 100 to 400 watts.

The frequency of oscillation is determined by the selective filter in the feed-back circuit. The feed-back transformer saturates thus producing a square wave which switches on and off the current flow through the output transformer. (See Fig. 2.) Transistors Q_1 and Q_2 are alternately turned on and off in a multivibrator action.

The converter begins to oscillate when the solenoid switch S_1 is closed. The solenoid is turned on by a timer circuit. Switch S_2 is a foot switch which activates the automatic timing control.

The power source is a 28 volt Nicad battery of the 4 AH type. The battery is capable of 70 amperes for periods of 0.1 second intervals. The pulse time is adjustable between 0.05 to .3 seconds. Preliminary experiments have shown 0.05 to 0.1 seconds duration sufficient for effective stimulation.

The instrument contains a trickle charger which is left on when the instrument is not in use. The battery life is over 20 years with an unlimited number of charging cycles. No gassing takes place on charge or discharge.

The output voltage (square wave) of this instrument is 275 volts peak to peak across 50 ohms; resistance to current flows through the heart varies depending on the degree of heart anoxia.

Early animal experiments at normothermic and hypothermic levels demonstrate that such a unit can be used successfully to defibrillate the canine heart.

Conclusion. There appears to be a range of frequencies bordered by 50 cps. at the lower and 300 cps. on the upper end which is effective for cardiac defibrillation. In this range a square wave pattern frequency of 150-250 cps. was found most effective. The 250 cps. was chosen since it resulted in a 40% decrease in power transformer size and a 65-85% increase in operating efficiency. The frequency span between 300 and 400 cps. was no more efficacious than the 30-60 second cycle range.

From the above data a compact portable, battery operated defibrillator was designed and constructed.

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The Choice of a Sympathomimetic Amine

JOHN C. KRANTZ, JR., Ph.D.

PHARMACOLOGY as a basic science in the medical curriculum had its origin at the turn of the century when John J. Abel was appointed to the chair of pharmacology in the Johns Hopkins Medical School. To him goes the credit for having placed the discipline on a scientific basis. Soon after this appointment, Abel succeeded in separating from the adrenal medulla the first active principle from a gland of internal secretion, namely epinephrine. In 1904 the structure was established by Stolz and its synthesis achieved.

Although norepinephrine was undoubtedly present in the epinephrine isolated by Abel, this agent was not made available for therapeutic purposes until a decade ago. Indeed it was shown at that time that all the commercially available epinephrine prior to 1950 contained amounts of norepinephrine that varied from 10.5-18.5%.

The isolation of ephedrine from Ma-Huang by Nagai in 1887 and its application to clinical medicine, that was so brilliantly delineated by Chen 1920-30, lent specific impetus to research in this field of pressor amines. This work has been productive in the synthesis of more than two score of these agents which find their application in the treatment of asthma, allergic states, psychic depression, nasal congestion, and hypotension.

Pharmacologic investigations, well substantiated by clinical observations, have made it abundantly clear that although these agents elicit certain pharmacologic

responses in common, there are many differences that exist in their finer pharmacologic profiles. Therefore a drug of choice among the sympathomimetic agents requires great skill in selection based upon a knowledge of the detailed pharmacologic response to the specific drug.

Drug of choice. The extensive use of the sympathomimetic amines has indicated their relative degrees of usefulness in various clinical conditions. From the point of view of this observer the following table lists the value of these agents supported by a substantial medical opinion.

Choice of a Sympathomimetic Amine in the Hypotension of Spinal Anesthesia. It has been well established that the hypotension that occurs during spinal anesthesia consists of at least three components. The primary cause is due to the blocking of the sympathetic fibers that control arteriolar constriction. Another factor is the complete relaxation of skeletal muscle in the abdominal area and lower extremities which permits further mechanical dilatation of the blood vessels supplying the skeletal musculature. The third contributing cause is associated with the bradycardia of spinal anesthesia owing to increased vagal tone. This, however, may be self-compensatory owing to a more complete diastolic filling of the chambers of the heart and a concomitant improved stroke volume. It is clear that the degree of hypotension is a function of the dose of the anesthetic agent. It is aggravated also by the ascent of the agent in the spinal cord.

Since the myocardium is not impaired

A lecture delivered before the staff of the Veterans Hospitals of the Trenton, New Jersey, area, November 3, 1960.

Choice of a Sympathomimetic Amine

1. Bronchial Asthma	Epinephrine Isopropylarterenol Ephedrine
2. Acute Cardiac Arrest	Epinephrine
3. Urticarial States	Epinephrine
4. Cerebral Stimulation	Dexedrine
5. Nasal Congestion	Phenylephrine Benzedrex Clopane
6. Pupillary Dilatation	Ephedrine Sulfate
7. Vasoconstriction in Local Anesthesia	Epinephrine Norepinephrine
8. Hypotension in Spinal Anesthesia	Phenylephrine Ephedrine Mephentermine
9. Vasomotor Failure and Cardiogenic Shock	Mephentermine Methamphetamine Methylaminoheptane

in hypotension of this origin, the inotropic effect on the myocardium of the vasoconstrictor is not as crucial as it is in cases of cardiogenic shock. Duration of pressor response is important. For many years ephedrine was the drug of choice. Later phenylephrine imposed strong competition and, more recently, mephentermine has been gaining favor. Mephentermine elicits no cerebral stimulation as does ephedrine. Heart rate changes are minimal and, in addition, this sympathomimetic amine increases coronary flow and further improves cardiac output.

An analysis of the vasoconstrictor agents used in the hypotension of spinal anesthesia has been carried out by Anderson (1959). His conclusions are shown in table II.

Choice of a Sympathomimetic Amine in Vasomotor Failure and Cardiogenic Shock. The choice of a pressor amine in states of vasomotor failure with cardiac in-

volvement is often critical and may result in recovery from or the aggravation of the shock-like state. Geever and Watts (1959) studied the peripheral arterial blood levels of epinephrine in dogs in various stages of hemorrhagic shock. The epinephrine concentration in arterial blood increased from control levels of $1 \mu\text{L}$ to a maximum of $20 \mu\text{L}$ when the arterial blood pressure was held at 40 mm. Hg. These increases of epinephrine suggest that the endogenous plethora of secreted epinephrine is sufficient to account for the intense vasoconstriction of early shock. The arterial blood levels in the same extremity were higher than the venous levels. This indicates that the arteriovenous epinephrine level differences represent the inactivation of epinephrine in skeletal muscle. The vasoconstriction may be further augmented by the injection of this pressor amine. Epinephrine is the most potent available agent for direct

	Ephedrine	Mephentermine	Desoxyephedrine	Methoxamine	Phenylephrine
Synonyms	—	Wyamine	Methedrine Methamphetamine	Vasoxyl	Neosynephrine
Stability	Base Decomposes HCl Stable	Stable	Stable	Stable	Oxidizes Easily
Action	Adrenergic on Effector Cells	Same	Same	Same	Same
Elimination	Slowly Destroyed in Liver	Metabolized Oxidized	Slowly Destroyed or Eliminated	Destroyed or Eliminated	Oxidized
Central Stimulation	Some Tremor and Excitement	Present but of Low Order	Marked	None	Slight
Cardiac Rate	Accelerated	Unchanged or Slowed	Accelerated	Slowed, often Markedly	Slowed
Cardiac Output	Increased Contractility	No Change	Increased	No Change	Increased
Tendency to Arrhythmias	Increased Tendency to Auricular Fibrillation	None	Occasional Auricular Fibrillation	Bradycardia with Large Doses	None
Effect on Coronaries	Dilated and Increased Flow	Increased Flow	Dilated	Dilated	Dilated
Systolic Pressure	Elevated	Elevated	Elevated	Elevated	Elevated
Diastolic Pressure	Slightly Elevated	Slightly Elevated	Elevation or None	Elevated	Elevated
Average Dose Intramuscular Intravenous	50 mg. 15-25 mg.	35 mg. 15-30 mg.	20 mg. 5-10 mg.	15 mg. 5 mg.	3-5 mg. 0.25-0.5 mg.

Sympathomimetic Amines in the Hypotension of Spinal Anesthesia—(Anderson, 1959)

cardiac stimulation in the arrested heart. The possibility, however, of its initiating ventricular arrhythmias is a definite limiting factor in its use as a pressor agent in cardiogenic shock. Let us consider some of the other agents.

Norepinephrine and Metaraminol stimulate the ventricular force of the heart. Owing to the accompanying bradycardia the cardiac output may remain unchanged. The pressor response of these two drugs appears to be due entirely to vasoconstriction. If, however, the vagus is blocked by atropine, the increased cardiac output may augment the pressor response.

Ephedrine and hydroxyamphetamine are two pressor agents that elicit responses similar to those of norepinephrine and Metaraminol.

Methoxamine (Vasoxyl) and phenylephrine likewise elicit a pressor response mainly through vasoconstriction. The first mentioned drug is devoid of any stimulant action on the heart. Phenylephrine evokes only a slight stimulant action upon the heart.

On the other hand, the three pressor amines, mephentermine (Wyamine), methamphetamine and methylaminoheptane elicit hypertension primarily by

virtue of their stimulating action on the heart, which action preponderates in the presence of the vasodilatation evoked by these agents. In addition these agents are antiarrhythmic. This action has been repeatedly demonstrated with mephentermine in blocking the cardiac arrhythmias evoked by epinephrine and other catechol amines under cyclopropane anesthesia. There is no crucial evidence to indicate the drug of choice among these agents. It does appear, however, to this observer, that mephentermine has been more extensively studied and used than either of the other two. It is convenient to use, stable in solution, and readily available in 15 to 45 mg. doses intravenously and intramuscularly.

Mechanism of Action of the Pressor Amines. The mechanism of action of epinephrine and norepinephrine has been the subject of extensive investigation for a half century. It is clear that these molecules stimulate the effector mechanism in the cells of the viscera innervated by the sympathetic division of the autonomic nervous system. According to the Gaddum hypothesis, the sympathomimetic amines inactivate the enzymes responsible for the biological degradation of epinephrine and thus prolong its action. Although this concept has served adequately as a working hypothesis for many years, it must be con-

sidered as only a first approximation of the mechanism of response at a cellular level. Rall *et al.* (1957) demonstrated that glycogenolytic response of the liver to epinephrine appears to be mediated by the conversion of phosphorylase kinase into an active state. It appears that epinephrine evokes the formation of 3', 5' cyclic adenosine monophosphate from adenosine triphosphate. The potency of the various catechol amines in activating the phosphorylase reaction in hepatic and likewise in cardiac tissue parallels their specific responses in these organs. Indeed much work at a cellular level is necessary to elucidate more completely this mechanism of response.

Summary. The study of the more detailed pharmacologic profiles of the sympathomimetic amines has made it possible to select with reasonable certainty the drug of choice for a variety of clinical conditions. Newer compounds and more detailed study will undoubtedly improve the armamentarium in this field. There is no short cut to the ideal sympathomimetic amine. The statement of Sir Frederick Hopkins is apropos of this field of study, "In a country rich in gold observant wayfarers may find a nugget on their path, but it is only the systematic mining that provides the currency of nations."

The Effect of Drugs on Experimental Shock in the Rat

A Preliminary Report

G. ALLEN MOULTON, M.D.,* MORITZ MICHAELIS, Ph.D. and JOHN A. WAGNER, M.D.

EXPERIMENTAL shock in the rat can be produced by rotation in a drum after the method of Noble & Collip.¹ Rats thus shocked evidence not only clinical but enzymatic changes as: uncoupling of oxidative phosphorylation in brain and heart,² and the inhibition of several dehydrogenases in brain.³ In addition the work of Otomo *et al.*⁴ indicates an alteration in blood brain barrier.

The purpose of this investigation was to study the effect of a number of drugs that influence the central nervous system as regards the prevention or alteration of a standard shock syndrome.

Material and Methods

A tumbling machine was used, as described by Noble & Collip,¹ in which each of 4 drums measuring 37.4 cm. in diameter and containing 2 prisms rotated at 40 revolutions per minute. White male Wistar rats between 190 and 300 Gm. were tumbled for varied times and observed for clinical effects and mortality for periods up to four days. Forty rats were used for each drug, the number

of rotations being chosen by the relative protective nature of the drug. The results of the controls compared favorably with previous reports.

The following drugs were tested: Me-probamate (Wallace), referred to as Mil-town; Homochlorcyclizine (Abbott), referred to as SA-97; Chlorethoxybntamoxane (Lilly), referred to as CEB; and morphine sulfate (U. S. P.).

The rats were treated as in Table 1:

Table 1

Drug	Amt/kg	Effect of Drug
Control	none	none
CEB	2 mg/kg	Tranquilizer
Miltown	300 mg/kg	Tranquilizer
SA-97	20 mg/kg	Excitant
Morphine sulfate	10 mg/kg	Narcotic

The rats were rotated and the mortality is expressed in Table 2:

Table 2. Mortality Percent

Rotations ¹	Control	CEB	Miltown	SA-97	Morphine Sulfate
480	—	—	—	0	67
520	25	—	0	0	43
560	50	—	13	33	50
600	63	—	25	42	86
640	75	0	37	67	100
680	88	33	50	100	—
720	100	50	—	—	—
760	—	18	—	—	—
800	—	75	—	—	—
840	—	100	—	—	—

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From The Division of Neuropathology and The Department of Surgery, School of Medicine, University of Maryland, Baltimore, Maryland.

We wish to thank The Eli Lilly Company, Indianapolis, Indiana, for the supply of the drug CEB.

* NINDB Special fellow in Neuropathology, School of Medicine, University of Maryland.

The effect of shock and its significant difference⁵ from the controls is in Table 3:

Table 3

Drug	LD ₁₆	LD ₅₀	LD ₈₄	Significant Difference from Control
Control	525	600	660	—————
CEB	690	760	840	Significant
Miltown	570	650	750	Not Significant
SA-97	560	620	670	Not Significant
Morphine Sulfate	480	520	610	Not Significant

Conclusions: There is indication that Chlorethoxybutamoxane (CEB) produces a significant modification in the effect of

traumatic shock in the rat. The other drugs, Miltown, SA-97, and morphine sulfate do not harm the rat by their presence.

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Arthrogryposis Multiplex Congenita

A Report of Four Cases

ERNEY MAHER, M.D.

AN UNCOMMON, almost unnoticed disorder in pediatrics is arthrogryposis multiplex congenita. Despite the lack of publicity, and the paucity of support and assistance given to those afflicted, this is a catastrophic disease when fully manifested. The most striking feature is the congenital malformation of multiple joints, leaving them rigid, swollen, and immobile. The patients spend a lifetime learning to walk. The inadequacy of our knowledge of this condition and the urgent need for ambitious study cannot be overemphasized.

Case Reports

There have been two cases of arthrogryposis multiplex congenita on the pediatric wards at the University Hospital in the last 18 months, and at least four cases in the past ten years.

Case 1. J. J., an eight-year-old colored male, was admitted on August 3, 1951 on transfer from Kernan's Hospital for consideration of medical treatment of arthrogryposis. Physical examination revealed a well-developed crippled young male with limitation of motion in the shoulders, elbows, wrists, hips, knees, and ankles. There was a talipes equinus deformity bilaterally, slight swelling of the joints, and a moderate amount of muscle atrophy. A rotation deformity of the distal right femur and upper end of the tibia and fibula was also noted. The possible use of ACTH to reduce the joint deformities was discussed and rejected. The patient was discharged to continue supportive orthopedic measures.

From The Department of Pediatrics, School of Medicine, University of Maryland, Baltimore.

Case 2. B. B. R., #101-9-35, a three-day-old white male infant, was admitted August 6, 1956 and expired on August 7. The baby was born to a 20-year-old primagravida mother after 33 weeks pregnancy. There were no complications of the pregnancy or delivery. The birth weight was four pounds, six ounces.

Physical examination revealed multiple congenital anomalies, but the baby was in no distress. The posterior fontanelle was wider than the anterior. There was a complete cleft palate with harelip on the left. The chest was deformed, with the right side having a greater anterior-posterior diameter than the left. The lungs and heart were apparently normal. In the abdomen, bilateral, firm, ballotable masses could be felt. The testes were undescended. A thermometer could be passed only one centimeter into the rectum. The feet were abducted and everted bilaterally. The knees were fixed in 10° flexion. The Moro reflex was fair, and the cry weak. The skin and sclerae revealed mild icterus. Abdominal x-ray showed rectal atresia or stenosis approximately one centimeter in length. There was no abdominal distension. Several hours after admission the infant suddenly expired.

Gross findings at autopsy included the obvious foot deformities, cleft palate, and harelip. Also, a high intraventricular septal defect and a rectal stenosis were noted. The microscopic examination of the brain revealed cerebral swelling. No joints were examined microscopically, nor was the musculature.

Case 3. D. G., #16-85-00, a three-month-old white female, was admitted December 5, 1958, with the complaint of inability to bend the arms or legs since birth. The pregnancy had been uncomplicated, but the baby delivered precipitously at home, unattended, apparently from a frank breech position. The baby was examined and admitted to another hospital. Abnormalities of upper and lower extremities were noted, and the wrists were placed in casts for two months without improvement.

On physical examination this was a poorly developed, fairly nourished white female infant in no distress. The head was normal, but the palate was high and arched. The chest was clear. The liver and spleen were barely palpable. The arms were fixed in extension and rotated internally. The wrists were acutely flexed. There was limited abduction of the hips, suggesting subluxation. The knees were fixed in extension. A tightened Achilles tendon resulted in an exaggerated arch of the feet. Multiple hemangiomas were noted over the eyebrows, nose, and chin.

The hospital course was uneventful, no specific therapy was initiated, and the child was transferred to Kernan's Hospital for orthopedic management.

Case 4. B. S., #18-67-49. This was a six pound colored male infant born at the University Hospital to a 22-year-old-mother on August 15, 1959 after 40 weeks pregnancy. The delivery was by cesarean section, the indication being a previous section. At the time of delivery he was noted to be in frank breech position with the lower extremities stiff and flexed at the hip. Careful examination revealed the head to be markedly moulded and asymmetric with a circumference of 37 cm. The chest was 30 cm. and the length 47 cm. The eyelids were somewhat edematous. The tongue was thin and narrow, and the neck short, but freely movable. The heart and lungs were essentially normal. There were no masses in the abdomen. The testicles were descended. There was a webbing attaching the inferior surface of the penis with the scrotum. The hips were fixed in flexion at 50° and were virtually immobile. There was a dimple defect of the skin over the left thigh. The knees were fixed in extension with 20° of motion in the left knee, and 45° in the right. The tibias appeared to be rotated unusually on the femurs. The feet demonstrated a calcaneo valgus deformity bilaterally. The upper extremities allowed a complete range of motion. X-rays revealed bilateral congenital dislocation of the hips, and no other abnormalities of the extremities. The chest film revealed a large density in the right lower chest, felt to be segmentation of the right hemidiaphragm due to a lobe of the liver.

The patient was discharged in the care of his mother, with conservative management of



Fig. 1. Typical habitus of patient (B.S.) with arthrogryposis.

the dislocations with extra diapers to maintain abduction of the hips, and follow up care at the Kernan Hospital clinic.

Discussion

History. The first description of this condition was by A. G. Otto in 1841, under the title of "congenital myodystrophy." In 1905 Rosenkranz described 56 cases, and coined the term "arthrogryposis multiplex congenita," which is from the Greek meaning "crooked joint." Rocher surveyed the literature and noted 26 case reports in 1913. Very little was reported thereafter until the last two decades, when there seems to have been a renewed interest in this problem.

Etiology and Pathology. Both the underlying cause of this disorder and the primary pathological changes remain in dispute. Various theories have placed the primary defect in the joints *per se*, in the muscle, in the central nervous system, and in abnormal uterine contractions. Autopsy findings are infrequently reported and



Fig. 2. Lower extremities of B.S. demonstrating smooth skin and pathologic joints.



Fig. 3. Roentgenographic demonstration of congenital dislocation of hips in B.S.

often poorly documented. They have described the musculature as hypertrophied, normal or small. Most joints have been markedly fibrosed with a lack of loose areolar tissue. Many authors have reported a decreased number of anterior horn cells in the spinal cord. Ek believed that four of his 15 patients were mentally deficient; however, Kite, Katzeff, and Mead reported no mental deficiency in a total of 112 cases of arthrogryposis. The role of heredity is also disputed. Roberts has studied a disease in sheep, inherited as a simple recessive characteristic, with strikingly similar deformities. Some authors claim a family history of congenital joint abnormalities is frequently found, while other authors have seen no familial patterns.

Clinical Features. As seen from the above cases, there can be a great deal of variation in this syndrome, and the strict definition of the disorder varies with different authors. Virtually all agree that severe limitation of joint motion, and smooth uncreased skin around these joints

are characteristic. The latter has been called the "sausage skin appearance." On examination there is generally poor muscle development, and the joints are stiff, thickened, and contracted. Generally, the arms are rotated externally, and the thighs internally. Associated dimpling of the skin over the patella or the elbow. Most of the infants are active, with a normal zest for life. They are good feeders and show no evidence of pain in their deformities. There is no reported racial predilection, but a sexual predominance towards males is reported from 60 to 85%.

Since the joint deformities provide the most striking features, it seems important to know which joints are most frequently involved, and the type of involvement demonstrated. Two large series of cases reported in the last four years give a careful analysis of the frequency of joint involvement. By combining their data, we have 94 cases to tabulate (Kite 1955, Mead *et al.*, 1958).

Abnormalities of the feet were most

common, occurring in over 90% of the patients. Better than 75% of these deformities were of the equino varus or classical clubfoot variety. The knees were affected in 75 to 80% of the cases. Of these, three-fourths were flexion deformities. The hips were abnormal in 70% of the cases, over one-half showing congenital dislocation.

The upper extremities were not as commonly involved. The wrists were deformed in 60%, nearly always in flexion. The hands and elbows were involved in one-half of the cases, the shoulders in 40%.

In the four cases presented above, the knees and feet were affected on each occasion, the hips in three cases, the upper extremities in two cases. Associated anomalies were primarily noted in the second case: cleft palate, rectal stenosis, intraventricular septal defect, and a thoracic cage abnormality.

Therapy. The treatment of this disorder is not satisfactory. Manipulations, supports, splints, braces, and surgical correction are employed through different phases of the child's development. The condition is non-progressive, and the goal of therapy is to enable the patients to make the best use of what they have. This nearly always falls into the realm of the orthopedist, but the procedures will be briefly described.

The club foot is a major, recurring concern, even with early casting. Often an osteotomy is done at adolescence to keep the foot straight. If the hips have severe flexion deformities, they are extended, surgically if necessary. Conservative therapy, however, is frequently more successful than surgery on the hip dislocations. The knees are manipulated into a weight bearing position by casts, soft tissue surgery, or osteotomy. It is important to establish one elbow in flexion, by capsulotomy, if conservative measures are

ineffective. The wrists are made as functional as possible, and an active thumb is the major goal of hand surgery. In summary, the joints of a severe arthrogrypotic patient never return to normal. If the end result is functional, it is successful.

Related Entities. Arthrogryposis multiplex congenita is frequently discussed in the European literature, but included under a group of disorders called the Pterygium syndrome, or Status Bonnevie-Ullrich. Much of this work has been reviewed recently by Gharib and Stickler. They list the various entities as follows:

- I. *Status Ullrich*
 webbed neck
 cranial nerve impairment
 deformed extremities
 hypoplasia of breasts
 retarded growth
 mental retardation
 telencegasia
 thorax deformities
 muscular hypotonia
 mushroom shaped epiphysis
 of long bones
 malformations of the ear
 epicanthal folds
 hypertelorism
- II. *Dystrophica Brevicollis Congenita*
 pterygium colli (webbed neck)
 vertebral malformation
 (Klippel-Feil)
 any of #I
- III. *Turner's Syndrome*
 webbed neck
 chromatin negative
 gonadal dysfunction
 cubitus valgus
 any of #I
- IV. *Status Ullrich Unilateralis*
 (as in #I but all features are unilateral)
- V. *Arthrogryposis Multiplex Congenita*
 unilateral or bilateral
 pterygium of extremities
 aplasia of muscles
 ankylosis of joints
 any of #I

Gharib mentions that these groups are by no means well defined, which is an understatement of the confusion that exists. Rossi has reviewed 177 cases in the literature which he feels belong to the Pterygium syndrome, and has added 20 additional cases. In view of the chromosomal abnormality seen in Turner's Syndrome, it would be interesting to study the genetic makeup of the related entities.

Conclusion

It now appears that there is a wide spectrum of related congenital malformations of the newborn, primarily affecting mesenchymal tissue. When a case presents primarily ankylosis of the joints, we have arbitrarily attached the name arthrogryposis multiplex congenita. At present the outlook is bleak for those afflicted, but it is important to remember that with relentless efforts these crippled infants can frequently become useful citizens.

Acknowledgment

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The Syndrome of Rud

A Case Report

CHARLES E. WRIGHT, M.D.

CONGENITAL ichthyosis, oligophrenia, dwarfism, and alopecia were observed in an eight-year-old Negro boy. He died of an amebic abscess of the liver, an unusual illness in childhood. The following is a report of the observations made during his life and after death, followed by a brief discussion of the observations of other authors.

Case Report

This eight-year-old Negro boy was admitted from a local training school because of fever and hepatomegaly of two weeks duration. Bloody diarrhea was noted during the first five days of the present illness. The child was treated unsuccessfully with several antibiotics. Because of abdominal distention and progressive anemia, he was admitted to University Hospital for further study.

Past history reveals that the patient was born from breech position following a 36-hour labor. Respirations were not established for several minutes. Both ichthyosis and alopecia were apparent at birth. The boy passed his developmental milestones slowly and was finally admitted to a local training school at seven years of age.

During the next few months, the child was studied from several points of view. His I.Q. was 31. An ophthalmologist described ptosis palpebralis, esotropia, nystagmus, and blepharospasm so severe that the fundi could not be examined. A neurologist could find no evidence of spasticity. The diagnoses of ichthyosis and alopecia totalis were confirmed by biopsy. The bone age was about five years.

The family history revealed the mother, father, and two younger female siblings to be in good health. Epilepsy and mental illness were present in paternal cousins. No history of alopecia or ichthyosis could be elicited.

From the Department of Pediatrics, University Hospital, University of Maryland, Baltimore 1, Md.



Fig. 1. Patient on admission shows alopecia totalis.

On examination upon admission to University Hospital, the child appeared acutely ill and quite pale with a temperature of 101°F. The previously mentioned anomalies were found (Fig. 1) together with absence of the lateral incisor teeth and partial fusion of the second and third toes bilaterally (Fig. 2). The abdomen was distended and the liver edge palpable at the iliac crest (Fig. 3). The liver was tender to palpation. The neurological examination, except for the retardation, was within normal limits.

Laboratory data revealed a hemoglobin of 4.9 Gm. and a white count of 28,000 with a normal differential cell count. The pertinent blood chemistries were as follows: sugar 62 mgm%, alkaline phosphatase 7.3 Bodansky units, BUN 1 mgm%, total bilirubin 2.6 mgms% (direct 1.4, indirect 1.2), thymol 12.6 units and A/G ratio 2.5/2.9. No ova or parasites could be found on three stool examinations. Roentgenograms of the abdomen revealed only an enlarged liver, and the chest was normal. Proctoscopic examination failed



Fig. 2. The ichthyosis of the legs is striking.



Fig. 3. The liver edge has been marked.

to reveal colonic ulceration or other abnormality.

Because the patient had a septic course and amebiasis seemed a likely diagnosis, the patient was given emetine, 13 mgm. daily, by intramuscular injection. No other antibiotics were used. The patient continued to deteriorate and expired on the seventh hospital day.

Autopsy

The body weighed 40 lbs. and measured 40 inches in length. Acute and chronic amebic colitis were found in the cecum and ascending colon. A huge liver abscess was found occupying most of the right lobe of the liver (Fig. 4). *Hemolytic staphylococcus aureus*, *proteus*, and *E. coli* were cultured from the abscess. Subdiaphragmatic and diaphragmatic abscesses together with pleurisy and pneumonitis of the right lower lobe were present in association with the liver abscess. No amebae could be identified on microscopic section despite typical gross findings. It was thought that the course of emetine therapy might explain the absence of histologically identifiable amebae.

Discussion

The patient was of unusual interest from two standpoints; first the association of the various congenital anomalies, and second, the mode of exodus, amebic abscess of the liver.

Several authors have commented on



Fig. 4. Amebic abscess of liver at autopsy measuring 10 cms. in diameter.

the simultaneous occurrence of ichthyosis and oligophrenia. Three different syndromes have apparently evolved in the literature. Rud¹ in 1927 described a 22-year-old male with the following afflictions: ichthyosis, oligophrenia, infantilism, dwarfism, genital atrophy, tetany, epilepsy, polyneuritis, and hypochromic macrocytic anemia. Ewing² in 1956 reviewed the literature and could find only six cases of the syndrome reported and described an additional five cases. The three indispensable features of Rud's syndrome are oligophrenia, ichthyosis, and epilepsy. In 1932, DeSanctis and Cacchione³ described the three brothers afflicted with idiocy, pigmented xeroderma, testicular hypoplasia, and retarded body development. The term xerodermic idiocy was introduced for this syndrome which differs from the Rud's syndrome chiefly by the absence of epilepsy. It would seem also that the skin changes are more pronounced in patients with the Rud syndrome. In 1957, Sjogren and Larrson⁴ described 28 cases of a syndrome consisting of low grade oligophrenia, congenital ichthyosis, and spastic pyramidal symptoms. The cases arose in families with ancestral roots in one county of northern Sweden. As far as this author is aware, there are only two reports of this syndrome in the American literature to date, and neither patient of Swedish ancestry.^{5, 6}

The case presented in this paper would seem to be classified best as a Rud's syndrome. The absence of epilepsy in this patient may be explained by the age of the boy. At least two of Ewing's cases first had convulsions at an older age than this patient at the time of his death. Had this boy lived longer, convulsions might well have appeared. In fact, as Ewing

suggests, the Rud syndrome and xerodermic idiocy may prove to be manifestations of the same disease process, the patients with xerodermic idiocy simply not yet manifesting epilepsy. Many of the patients with xerodermic idiocy reported seem to be children who may not have lived long enough for convulsions to appear as a part of their disease process. The case described in this paper did not have the spasticity necessary for a diagnosis of the Sjogren-Larsson syndrome.

Although the increased occurrence of amebiasis in institutional populations is well known, the presence of hepatic amebic abscess in childhood is quite unusual. A review of hepatic amebiasis by Ochsner⁷ in 1951 based on 263 cases over a 20 year period reported only two cases in children under ten years of age. Ochsner found that the mortality rate in hepatic abscess not secondarily infected was 5.5%. If the abscess is secondarily infected with pathogenic bacteria, as in this case, the mortality rate was 40%. Ochsner recommended conservative treatment for the hepatic abscesses. He felt that needle aspiration of the abscess cavity and emetine therapy were sufficient treatment for sterile abscesses. A recent report by Powell⁸ suggests that emetine is still superior to chloroquine, since with emetine there are more satisfactory initial responses and fewer relapses. Most⁹ recommends the simultaneous use of emetine and chloroquine, feeling the combination to be beneficial.

Summary

A case of congenital ichthyosis, alopecia, and oligophrenia classified as the syndrome of Rud is presented and discussed. The patient died of an amebic abscess and this condition is discussed briefly.

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OBSTETRICAL CASE REPORT

Prepared by EDMUND B. MIDDLETON, M.D.

MRS. E. J. was a 32-year-old colored female, para 3003. Her last normal menstrual period began on July 26, 1959 and the estimated date of confinement was May 2, 1960.

She was examined for the first time on March 2, 1960, when she presented herself on the delivery floor with a history of painless vaginal bleeding.

Her past obstetrical history was significant in that she had been delivered of 3 full-term children vaginally and without incident. Birth weights of these children were all between 7 and 8 lb. There was no history of hypertension during or between pregnancies.

The present pregnancy had been without incident until the day of admission. Total weight gain had been 22 lb. There had been no symptoms referable to hypertension or toxemia of pregnancy. She awakened on the morning of admission to find that she had lost approximately one cupful of bright red blood. There were no abdominal cramps and no further bleeding had occurred. Fetal movements were present.

On admission to the delivery suite, her blood pressure was 126/80 with a pulse rate of 86 per minute. She was afebrile. There were no abnormalities of the head, neck, lungs, heart, or extremities. The abdominal examination revealed the height of the uterine fundus to be 25 cm.

The presenting part was a breech, which was not fixed in the pelvis. The fetal heart tones were heard in the left upper quadrant at a normal rate. The estimated fetal weight was 4½ lb. Pelvic or rectal examinations were not done.

Laboratory data included blood hemoglobin of 10.9 Gm. Urinalysis was normal. Blood was typed and cross-matched immediately.

The patient was observed for a period of 24 hours at the end of which a repeat blood hemoglobin was 10.7 Gm. No further bleeding had occurred and no evidence of uterine contractions had appeared. At this time a gentle speculum examination of the cervix was done. A few small blood clots were evacuated from the vagina. The cervix was found to be uneffaced and undilated with no evidence of a cervical lesion. No further bleeding occurred. A vaginal cytologic study was taken next. A hematinic was prescribed. The patient was discharged and told to report immediately if further bleeding occurred.

She was followed at weekly intervals for the next four weeks. She again returned with a history of the loss of approximately one cupful of blood per vaginam. Admission physical examination revealed the same findings as noted previously but now with an estimated fetal weight of 5½ lb. Blood hemoglobin at this time was 11.4 Gm.

At this time she was admitted and plans were made for pelvic examination with the operating room prepared for immedi-

From the Department of Obstetrics and Gynecology, School of Medicine, University of Maryland, Baltimore, Maryland.

ate cesarean section. As soon as blood for transfusion was available, examination revealed a central placenta previa. Immediately following a low cervical cesarean section was performed under general anesthesia with delivery of a full term living male child weighing 5 lb. 9 oz. The postpartum course was entirely uneventful, and she was discharged on the seventh postoperative day with the baby in good condition.

Comment

There are several interesting features about the management of a potential placenta previa which are seen in this case.

When the patient first experienced painless vaginal bleeding, a diagnosis of placenta previa was entertained; but with a premature baby and moderate blood loss conservative management was indicated. It was believed that a vaginal or cervical lesion should be ruled out as the cause of bleeding. When she returned following the second episode of painless bleeding, she had a "term sized" infant, a normal blood hemoglobin and, therefore, there was no reason to delay definitive therapy. By conservative management, the infant was afforded a much greater chance of survival.



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I herewith transmit my annual MEMBERSHIP DUES of \$10.00 to the Medical Alumni Association of the School of Medicine, University of Maryland from May 1, 1960, to April 30, 1961, \$3.00 of which is for a subscription to the BULLETIN of the School of Medicine, University of Maryland, for one year.

Make checks payable to Medical Alumni Association.

Dr. _____

Address _____



MEDICAL SCHOOL SECTION

Dean's **LETTER**

Dear Members of the Medical Alumni and Friends of the Medical School:

The Medical School has recently received a grant from the U. S. Public Health Service of over \$600,000.00 to allow us to establish a metabolic ward and area of clinical investigation. The grant was made possible by the generous gift of \$55,000.00 toward construction of the project by Mr. Albert A. Shuger, a prominent Baltimore business man. The project is expected to receive continuing support for its operation by yearly grants of about \$330,000.00 from the U. S. Public Health Service.

The metabolic studies will be under the direction of Dr. Theodore E. Woodward and Dr. Thomas Connor, and the projects will represent the interest of the combined faculty of the Medical School.

We feel very fortunate in being selected as one of the initial schools receiving backing for metabolic studies. It represents some of the foresighted thinking of the faculty and an indication of the progress being made in Medical Education and Research.

I wish to extend the Season's Greetings to all of you and the invitation to visit the campus and participate in our teaching programs whenever you can.

Sincerely,

WILLIAM S. STONE, M.D.
Dean

School and Hospital Plan Metabolic Research Unit

FROM INFORMATION released jointly through the School of Medicine and the University Hospital, plans are now in progress for the construction of a \$600,000 hospital unit for investigative work relating to chemical and metabolic disorders. The award of \$601,686 is from the National Institutes of Health for the establishment of a clinical research center at the University Hospital.

Dr. Stone states that he hopes the center will serve as a nucleus for a broad research program aimed at a more rational approach to the treatment and prevention of human diseases. Continuing, he said that "Many of the major medical advances of the present century have been made possible through discoveries relating to the nature of the living cell and its function. Much of this intimate knowledge has been gained through painstaking biophysical and biochemical study of living organisms."

While it is recognized that animal experimentation has contributed a great deal to the understanding of disease processes, certain physiological and chemical reactions are known to be peculiar to man and it is the proposal of this unit to investigate human disease by this direct route.

The laboratory will first be particularly devoted to the fields of metabolic, renal, myocardial, rheumatic, and infectious disorders, although expansion into other types of disease might follow. Facilities will be complete for nutritional, chemical, physiological, and biophysical studies and will be wholly contained in the unit which will be constructed on the third floor of the University Hospital with refurbishment of the A or North Wing.

Patients consenting to hospitalization in the unit will be observed and treated for periods of a few days to as many as several weeks and will receive this hospitalization free of charge, the hospital costs being carried as a part of the investigative program.

Besides plans for the physical and scientific organization of the unit, personnel will include approximately eight technicians, six nurses, three research fellows, a biochemist, a recreation therapist, a social worker, and a dietitian.

The unit will be under the direction of the Department of Medicine and will be headed by Drs. Theodore E. Woodward and Thomas B. Connor.

Board of Regents Names New Basic Science Building

THE RECENTLY purchased structure, a former department store, on the southeast corner of Pine and Baltimore Streets has been named John Eager Howard Hall. The building will house the School's Departments of Biochemistry, Pathology, Microbiology, Pharmacology, Physiology, and Biophysics.

The six-story building is now being prepared for thorough renovation, probably beginning during the summer of 1961. Federal assistance to the extent of about \$600,000 has been approved by the the Surgeon General of the United States Public Health Service.

1960 Julius Friedenwald Memorial Lecture

DR. H. MARVIN POLLARD, Professor of Medicine at the University of Michigan School of Medicine, was the 13th annual Friedenwald essayist, speaking on the subject "Methods for Evaluating Malabsorption." The lecture was given in Davidge Hall on November 15, 1960.

Dr. Richards Appointed Ophthalmology Head



DR. RICHARD D. RICHARDS has been appointed Professor of Ophthalmology and head of the department in the School of Medicine. Dr. Richards' nomination fills a vacancy which has existed for many years following the retirement of Dr. Harvey Clapp who for many years headed the department and who was followed by Dr. F. Edwin Knowles, Jr., as acting head. Dr. Knowles' untimely death several years ago created a vacancy in a much needed department. Dr. Richards becomes the first full-time Professor of Ophthalmology, although the specialty has been represented in the School of Medicine since 1867, when the first chair of ophthalmology and otolaryngology in the United States was established at the University of Maryland.

A native of Michigan and a graduate

of the University of Michigan, where he received both the Bachelor of Arts and Medical degrees, the latter in 1951, he served an internship and residency in ophthalmology at the State University of Iowa Hospitals and returned there in 1958 to join the ophthalmology faculty after a two year tour of duty in the Medical Corps of the United States Army. Dr. Richards' chief interest is in radiation cataracts, which he studied intensely prior to his appointment at the University of Maryland. Dr. Richards plans greatly increased departmental activity and a residency program. Dr. Richards is a member of Alpha Omega Alpha, Sigma Xi Society, the American Board of Ophthalmology, the American Academy of Ophthalmology and Otolaryngology, and the Associate of Research in Ophthalmology. He has published a number of papers principally related to radiation cataracts.

Faculty Inaugurates "Faculty Research Day"

FACULTY MEMBERS presenting original research will periodically be programed on "Faculty Research Day" throughout the school year. The programs, which will begin at 9:00 A.M., will be held in Gordon Wilson Hall, eighth floor, University Hospital. They are designed to present to the faculty the developments taking place in the various departments of the School of Medicine.

Dr. Russell R. Monroe Named Professor of Psychiatry

DR. RUSSELL R. MONROE, formerly of New Orleans where he served as Associate Professor of Psychiatry at Tulane University, has been named Professor of Psychiatry on the Faculty of the School of Medicine.

Faculty

NOTES

Department of Anatomy

DR. FRANK H. J. FIGGE, Professor and Chairman of the Department of Anatomy, was re-elected in September 1960 to the presidency of the Maryland Division of the American Cancer Society, to serve a fourth consecutive term. In August Dr. Figge attended a meeting of the Electron Microscope Society of America in Milwaukee, Wisc., as well as a symposium on Cancer Therapy in Madison, Wisc., sponsored by the National Institutes of Health and the University of Wisconsin. In September Dr. Figge presented a report on the Combined Health Appeal in Commerce and Industry at the Region Two Meeting of the American Cancer Society at The Greenbrier, White Sulphur Springs, W. Va. While attending the annual meeting of the National group of the American Cancer Society as delegate of the Maryland Division, Dr. Figge was appointed Research Spokesman for the Maryland Division.

DR. THEODORE J. CARSKI was appointed in September 1960 as an instructor, part time, in the Department of Anatomy. Following his graduation from this school in 1956 and the completion of his medical internship at University Hospital, Dr. Carski joined the U. S. Public Health Service in a program of research on fluorescent antibodies in the Virus and Rickettsia Section at the Communicable Disease Center, Montgomery, Ala. In October 1960 Dr. Carski spoke on *Fluorescent Antibody Techniques as Applied to Virus Diseases* at a symposium of the American Public Health Association, held in San Francisco, and

gave a lecture on fluorescent antibodies in diagnostic techniques in communicable diseases in a seminar conducted by The California Medical Technologists at Los Angeles.

In addition to his work with the Baltimore Biological Laboratory, Dr. Carski is assisting in the course in Microanatomy in the Medical School and plans to apply some of his research methods in the cancer research program of the Department of Anatomy.

DR. CHARLES G. CRISPENS, formerly a Postdoctoral Fellow at the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Me., was appointed in September 1960 as Instructor in Anatomy. In addition to his teaching responsibilities, Dr. Crispens plans to resume his studies on tumor viruses in mice.

DR. THEODORE F. LEVEQUE, Associate Professor of Anatomy, has been awarded a grant of \$4,709 by the American Cancer Society in support of his studies on "Hypothalamus and its Relation to Neoplastic Disease."

Department of Medicine

DR. WILLIAM S. SPICER of the Department of Medicine recently has been promoted to Associate Professor of Medicine.

DR. ADALBERT F. SCHUBART, head of the Division of Arthritis of the School of Medicine, has announced the receipt of two grants from the Arthritis and Rheumatism Foundation which will support the Arthritis Clinic at the University Hospital, as well as research to be conducted by the Division. The total grants from this source amounted to \$14,000, and an additional \$12,000 was received from the National Institutes of Health for research relating to the serological reactions in rheumatoid arthritis.

DR. WILLIAM G. ESMOND presented a paper entitled "Design and Implantation Trials of Prosthetic Silastic-Dacron (or Teflon) Ivalon Mitral Heart Valves" at the National Institutes of Health conference on Prosthetic Heart Valves held at the Edgewater Beach Hotel in Chicago on September 10. The paper will appear as a chapter in a book relating to prosthetic heart valves, shortly to be published by the National Institutes of Health. Dr. Esmond's work was assisted under a grant from the National Heart Institute, primarily for support of his investigations relating to the pump-oxygenator being developed at the University of Maryland. A recent grant of some \$60,000 will support continued investigation in the development of prosthetic heart valves, a project also headed by Dr. Esmond.

Dr. Esmond has also been active in the design of other instruments relating to cardiac surgery. He has recently published a paper entitled "Design and Application of a Disposable Stainless Steel Blood Heat Exchanger with the Integrated Disposable Plastic Disc Oxygenation System." This paper was presented at the American Society for Artificial Internal Organs at its annual meeting in Chicago. These heat exchangers are now being manufactured and are offered commercially.

DR. JEROME K. MERLIS, Chief of the Division of Electroencephalography, has been nominated President of the American Electroencephalographic Society and will serve in this capacity during the year 1960-1961.

DR. CHARLES VAN BUSKIRK, Professor of Neurology, was named President of the Baltimore Neurological Society at its regular annual meeting on September

28, 1960. Dr. Van Buskirk will serve for the academic year 1960-1961.

Division of Legal Medicine Receives Army Grant

DR. CHARLES S. PETTY, Assistant Professor of Forensic Pathology, has announced the receipt of a contract for some \$45,000 for the purpose of investigating the toxicity of a number of commonly used military chemicals and in particular certain materials used as propellants for rockets and jet powered aircraft. Toxicity studies are contemplated on experimental animals.

DR. CHARLES L. WISSEMAN, Professor of Microbiology, served as moderator on a workshop on general subjects of mycology, tuberculosis, and anabrotic techniques held at the School of Medicine under the sponsorship of the Maryland Society of Medical Technologists and the Maryland Society of Pathologists.

Department of Pathology

DR. CLAIRE TURGEON joined the Department of Pathology as an Instructor on September 1, 1960. Dr. Turgeon received her M.D. degree at the University of Montreal in 1955 and served her internship and a portion of her residency in Pathologic Anatomy in Montreal. Following completion of her residency in Pathology at the New England Deaconess Hospital in Boston, she was appointed Research Fellow in Pathology at the Massachusetts Memorial Hospital in Boston. Dr. Turgeon's research interests and publications include works on cardiac tumors, morphologic studies on the relationship of pyelonephritis to hypertension, and juxtaglomerular cell counts in renal hypertension.

DR. ZUHIER M. NAIB has been promoted to the rank of Assistant Professor

of Pathology. Dr. Naib's research activities have centered upon the field of exfoliative cytology with particular emphasis upon the cytologic examination of urine sediment in the diagnosis of urinary tract neoplasms, and the cytologic study of exfoliated cells in sputa and bronchial washings in the diagnosis of pulmonary carcinoma. Dr. Naib's recent duties have included the direction of the Cytopathology Division of the University of Maryland School of Medicine.

GRANTS totalling more than \$163,000 have been recently awarded to the Department of Pathology and members of its staff as follows:

National Institutes of Health, \$125,000 covering a 5-year period, for the training in Experimental Pathology of Postgraduate Students who have had some residency training in Pathology.

National Institutes of Health, \$10,105, awarded to Dr. Colin Wood, Assistant Professor, for the study of Experimental Glomerulonephritis and Hypertension.

Atomic Energy Commission, \$10,000, awarded to Dr. Lester Kiefer, Assistant Professor, as a training grant for the Use of Radioisotopes in Experimental Pathology.

American Cancer Society, Maryland Division, \$4,000, renewal of a grant to Dr. Lester Kiefer for the study of Effects of Irradiation and a Polyfunctional Alkylating Agent on Experimental Carcinoma in Rabbits.

American Cancer Society, Maryland Division, \$4,371, awarded to Dr. Melvin D. Reuber, Trainee in Experimental Pathology, for a study of Partial Chemical Hypophysectomy with Specific Hormone Replacement and its Effects on Hepatic Carcinogenesis and Liver Cirrhosis.

National Institutes of Health, \$9,720, awarded to Dr. Harlan Firminger and

Dr. Melvin Reuber for the investigation of the Influence on Carcinogenesis of Mineralo- and Gluco-Corticoids.

Department of Pediatrics

A UNITED STATES Public Health Service Grant to support research into the possible influence of season and environment on the occurrence of lead encephalopathy has been announced by Dr. J. Edmund Bradley, Professor of Pediatrics. For some reason it has never been satisfactorily explained that most cases of lead encephalopathy occur in the summer months between March and November with a peak incidence during the months of July and August. In an attempt to account for this apparent influence of season and environment, investigation will center on the significance of such related factors as water loss, sunshine, and air pollution.

DR. SAMUEL S. GLICK has been promoted to Associate Professor of Pediatrics at the School of Medicine.

Department of Pharmacology

DR. JOHN C. KRANTZ, JR., Professor and Chairman of the Department of Pharmacology, participated in the Potomac-Shenandoah Valley Postgraduate Institute on October 22, 1960. The Institute was sponsored by the Eastern Panhandle Medical Society and the West Virginia Chapter of the American Association of General Practice. He presented a lecture entitled "Mechanism of Action of the Cardiac Glycosides." On November 3, 1960, Dr. Krantz spoke to the Trenton Area Conference of the Veterans Administration Hospitals on the topic "An Analysis of Vasoconstrictor Agents." On November 16, 1960, Dr. Krantz addressed the Peninsula Academy of Medicine at the James River

Country Club at Newport News, Va., on "The Implications of the Medical History of General Lee." On November 23, 1960, he gave a lecture on "The Development of New Drugs" to the Maryland Medical Technicians Society at Sinai Hospital in Baltimore. At the Medical College of Virginia at Richmond on November 28, 1960, Dr. Krantz presented a paper on "The Historical Aspects of Anesthesia." In New York City on December 7, 1960, he addressed the Proprietary Association of America on the subject "Animal Criteria in Evaluating a New Drug."

A new anesthetic "Fluoromar" has been released and placed on the market for general use, after having proved its general merit and safety in thousands of tests conducted throughout the country. Developed under the supervision of Dr. John C. Krantz, Jr., advantages of Fluoromar include greater potency and safety in comparison with ether, whose molecules it resembles. Tests have shown that Fluoromar produces light anesthesia for very painful operations with almost no change in respiratory rate, blood pressure, or pulse rate and that the after effects of an analgesic nature persist perhaps for as long as 30 minutes.

The receipt of a five year research grant totaling \$82,356 has been announced by Dr. John C. Krantz, Jr., Professor of Pharmacology. This grant now makes possible the acceptance of additional predoctoral and postdoctoral trainees in pharmacology.

DR. EDWARD B. TRUITT, JR., Professor of Pharmacology, presented a paper on December 9, 1960, at the meeting of the Society for Experimental Biology and Medicine at the John Hopkins School of Medicine. His paper entitled "The Anti-Alcohol Activity of Some Hypoglycemic

Sulfonyl Urea Derivatives in Animals and Man" is a report upon original studies conducted by Dr. Truitt in collaboration with Miss Ann M. Morgan, Mr. R. W. Prouty, Dr. Albert A. Kurland.

DR. RAYMOND M. BURGISON, Associate Professor of Pharmacology, visited the laboratories of the Department of Pharmacology at Yale University in October. While there, he attended a three-day symposium on the history of medicine covering medical progress in the 19th and 20th centuries.

On November 11, 1960, Dr. Burgison presented a lecture on "The Pharmacology of Volatile Anesthetics" in the postgraduate course in Clinical Pharmacology at the Hahnemann Medical College in Philadelphia.

Dr. Burgison was recently appointed Chairman of a lecture series on "Recent Advances in Organic and Biochemistry," sponsored by the Medical Section of the American Chemical Society. The course of 10 lectures, extending from November 1960 through February 1961, will be attended by 121 registrants and will be held in the facilities of the McCormick Co. in Baltimore.

DR. JOHN J. O'NEILL was appointed Associate Professor of Pharmacology, November 1, 1960. Dr. O'Neill was formerly Chief of the Enzyme Chemistry Branch of the Biochemical Research Division, Research Directorate at the Army Chemical Center, Edgewood, Md. His research interests include the organo - phosphorus anticholinesterases (nerve gases), fluorphosphatases which hydrolyze nerve gases, substances which affect the metabolism of nervous tissue and compounds called neurotoxins. At the University of Maryland he will study certain centrally acting drugs and their effects upon stimulated cerebral cortex.

Cortical slices in which the oxygen consumption has been stimulated are sensitive to a variety of narcotics. On such tissues Dr. O'Neill plans to investigate the effects of cocaine, LSD, and convulsants such as Indoklon.

Dr. O'Neill received his baccalaureate degree at St. Francis College in New York City, his Master's Degree in Organic Chemistry at the University of Maryland at College Park. He received his Ph.D. in Biochemistry at the University of Maryland in 1955.

Dr. O'Neill, his wife, and three children are making their home in the Campus Hills area of Towson, Md.

Department of Physiology

DR. WILLIAM D. BLAKE, Professor and Chairman of the Department of Physiology, attended a Graduate Seminar on October 29, 1960, at the Graduate School of Medicine of the University of Pennsylvania in Philadelphia. He presented a paper entitled "Norepinephrine and the Distribution of Renal Blood Flow."

In his course in Medical Physiology, Dr. Blake is making noteworthy conversions in teaching methods and equipment through the introduction of newer electronic devices. For example, students will learn to use the Grass Polygraph which is adaptable to the study of nerve-muscle, cardiovascular, and respiratory physiology. New equipment also includes electronic stimulators which provide a wide range of intensity and frequency of stimuli. Such devices will not only provide greater accuracy and control, but will serve to introduce students to methods which are employed in physiologic research.

Dr. Blake has announced the appointment to his staff of Dr. Leon Bernstein

as Associate Professor of Physiology. Dr. Bernstein will continue his work at the Veterans Administration Hospital in Baltimore and, at the Medical School, will participate in the Graduate program in the Department of Physiology. He will conduct a Graduate Seminar in Pulmonary Physiology and will participate in the laboratory teaching of Respiratory Physiology.

DR. LEO M. KARPELES joined the staff of the Department of Physiology on September 1, 1960, as Assistant Professor of Physiology. Dr. Karpeles graduated from the School of Medicine of the University of Washington in Seattle, Wash., in 1955. He will participate in the teaching of courses in Physiology and will continue his research in the development of techniques for the measurement of pressure-volume relationships of the heart during various phases of the cardiac cycle.

On November 7 and 8, 1960, the Departments of Pharmacology and Physiology were visited by two members of the faculty of the Lady Hardinge Medical College of New Delhi, India. They were Dr. C. L. Malhotra, Professor of Pharmacology, and Dr. V. Dutt Mullick, Professor of Physiology; both are making a tour of American Medical Schools under the auspices of the International Cooperation Agency.

DR. FERNANDO G. BLOEDORN, Associate Professor of Radiology in the School of Medicine, was guest lecturer at several national medical societies in South America. Dr. Bloedorn is planning a contribution on interstitial radium treatment to be published in a symposium on radiation therapy sponsored by the Fondation Curie in Paris, the publication to appear in 1961.

Surgical Seminar Announced

THE Department of Surgery has announced the inauguration of a series of monthly seminars to be sponsored by the Division of Thoracic Surgery and including subjects of broad medical interest. These seminars are planned to include prominent experts in the various fields selected for discussion.

On November 10, a seminar was held concerning "Radiomimetic Drugs in the Therapy of Cancer" and included Drs. Michael Shimkin, David Karnofsky, and Robert Schramel.

Other topics already scheduled include aviation medicine, radiation emergencies and other disasters, cardiac surgery, pulmonary physiology, and hypothermia.

Faculty Cooperate with Frederick Hospital Teaching Program

THROUGH an agreement between the Frederick Memorial Hospital and the School of Medicine, throughout the year a monthly visit will be made by a senior faculty member of the School of Medicine who will conduct rounds at the hospital as a part of a postgraduate teaching project. The initial visit for the academic year 1960-61 will be made by Dr. Harry C. Hull, Professor of Clinical Surgery. Dr. Hull's program will include morning ward rounds and attendance at a staff meeting, a lecture on breast cancer, and a conference period for the purpose of discussing technical and diagnostic problems.

Army Continues Department of Surgery Shock Project

RENEWAL of a grant to investigate the origin of and the effect of released ammonia in experimentally induced shock has been announced by Dr. R. Adams Cowley under whose supervision the

early phases of this work have progressed. The total grant is for more than \$172,000 and will continue the experimental studies for another year.

Dr. Moses Gellman Dies

Was Associate Professor of Orthopedic Surgery

DR. MOSES GELLMAN, Associate Professor of Orthopedic Surgery in the School of Medicine, died at the Sinai Hospital after a brief illness on November 12, 1960. Dr. Gellman was 64.

A native of Richmond, Va., and a graduate of the University of Richmond in 1917, Dr. Gellman was an alumnus of the Johns Hopkins University School of Medicine in the Class of 1921. His training in orthopedic surgery was received at the Sinai Hospital in Baltimore and the Hospital for Ruptured and Crippled Children in New York City. He was the author of numerous scientific articles in the field of orthopedic surgery. He was a practitioner of this specialty for approximately 35 years, serving on the medical staffs of a number of local hospitals. He was a Diplomate of the American Board of Orthopedic Surgery, a fellow of the American Academy of Orthopedic Surgery, and a member of the American Medical Association.

Correction

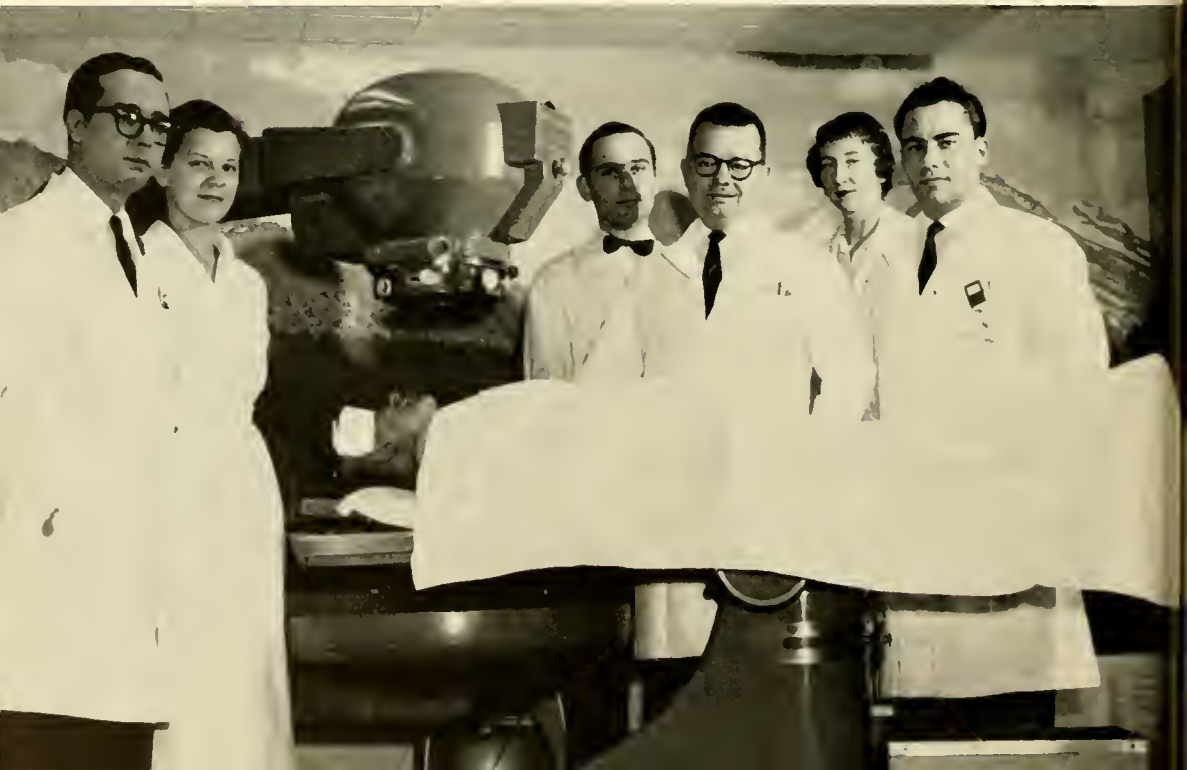
IN THE publication of the bibliographic notes of faculty publications for the year 1958, the following reference was omitted by error:

ESMOND, WILLIAM G. and SMITH, ANDREW: The Structure of Adult Peripheral Myelinated Nerve Fibers as Revealed by Phase Microscopy, *Experimental Cell Research* 14 (January 30, 1958). The BULLETIN regrets the omission.



In a typical noontime conference, two medical students (standing) discuss x-ray film with staff members of the radiology's diagnostic division (seated, left to right): Drs. Wolfel, Lyon, Dennis, and Boudreau.

Dr. Bloedorn and members of his staff in the cobalt treatment room. Left to right: Dr. Raul J. Mercado, instructor in radiology; Marlene Dilly, x-ray technician; Dr. Morris J. Wizenberg, research associate; Dr. Fernando G. Bloedorn, associate professor of radiology and head of the Division of Radiation Therapy; Dr. Joan Wohlgemuth, resident; and Dr. Carlo A. Cuccia, associate professor of radiology and assistant head of the Division of Radiotherapy.



iv. The Department of Radiology

BETH WILSON

IN 1911, when roentgenology was established as a separate department at University Hospital and the University of Maryland School of Medicine, it was the first such department to be so recognized in Baltimore and one of the first in the nation.

The department has always been dynamic. Dr. Henry J. Walton, the University's first professor of radiology, who retired in 1941 after 30 years of service, recalls that about every ten years since its founding radiology has moved to new quarters and has doubled or more than doubled its former space.

Today, the 30-year-old department is making faster progress than ever and has gained international recognition under the leadership of Dr. John M. Dennis.

Dr. Dennis became the department's first full-time director when he was appointed professor and head of the department on September 1, 1953. He had been with the University since 1951, first as instructor in radiology and after 1952 as associate.

He heads one of the department's two divisions, the division of diagnosis. The other, the division of radiation therapy, was created in 1955 with the appointment of Dr. Fernando G. Bloedorn as associate professor of radiology and first head of the division.

Activities of both divisions are directed to teaching, research, and clinical service. Owing to the great demand for clinical service at University Hospital this is necessarily the major activity, but each year more emphasis is being given to teaching and research.

Clinical Service

Diagnostic service is provided 24 hours a day. The service has more than doubled since 1953; last year 51,064 patients received a total of 75,692 examinations. Increasing need for special types of radiography has resulted in the establishment of subspecialties. Dr. James A. Lyon, for example, specializes in pediatric radiology and Dr. Robert B. Boudreau devotes most of his time to neurologic and cardiovascular radiology.

The present quarters of the diagnostic division, on the second floor of the hospital, represent a half-million-dollar expansion completed in 1959; 1953 floor space was more than doubled and equipment was tripled.

Therapeutic service is also growing rapidly. When the division of radiation therapy was set up in 1955 about 12-15 patients a day were receiving treatment. The number has now grown to an average of 70 patients a day.

In 1955 treatment was confined to the use of conventional x-ray equipment, producing 100,000-200,000 electron volts, and radium. The following year a radioactive cobalt unit was added. This unit produces a beam of radiation with an energy equivalent to three million electron volts.

The cobalt-60 unit was the first one in Maryland, and the only one until 1960. Its purchase and installation in the basement of The Psychiatric Institute were made possible by gifts of \$35,000 from the Filbert Foundation, \$12,000 from the Woman's Auxiliary, and \$5,000 from the

National Brewing Company, together with Hill-Burton funds to a total of \$55,000.

Since Dr. Bloedorn organized the division, with a technician as his only assistant, it has grown to become one of the most active centers in the country for the treatment of cancer. The staff now comprises three full-time radiotherapists, two residents and a research associate, and a technical and secretarial staff of seven. Treatments often start as early as 7 A.M. and are given as late as 10 P.M.

As in the diagnostic division, subspecialties have been created to fill the need for special types of treatment: Dr. Carlo A. Cuccia treats most gynecology cases; Dr. Raul Mercado, Jr., bladder and lung cases; and Dr. Bloedorn, tumors of the head and neck.

Patients come from all parts of Maryland and from as far away as Florida, Texas, California, and New England. Dr. Bloedorn and his staff maintain liaison with several smaller hospitals in Baltimore and also make monthly trips to Salisbury, Cambridge, and Cumberland to assist local physicians and to make arrangements for patients needing cobalt treatment to come to University Hospital.

This consultation service has proved so successful that the National Institutes of Health are studying the possibility of duplicating the procedure in other parts of the country needing trained cancer specialties.

Teaching

First year medical students are taught roentgen anatomy in 12 lecture demonstrations of the gross anatomy course; they also learn certain radiographic aspects of pulmonary and gastrointestinal

physiology during their laboratory time in physiology.

In their third year, students are given instruction in radiologic diagnosis at University Hospital (18 hours) and Baltimore City Hospitals (9 hours); at the end of the third year, they are taught the basic principles of radiation therapy (3 hours).

Because radiology cuts across many medical specialties it is also taught in connection with other courses during the third and fourth years. Students assigned to radiology are encouraged to attend the weekly clinical conferences that the department holds jointly with the Departments of Pediatrics and Medicine and the divisions of general surgery and neurosurgery.

For the past two years senior students have been serving a two-week clinical clerkship in the diagnostic division, where they observe and perform fluoroscopy, interview patients, correlate clinical and radiographic findings, and review cases with the teaching staff at daily noontime diagnostic conferences.

The students have found this clerkship valuable and it has led to the department's having the best residency program this year that it has ever had. Three of last year's graduates will train in radiology at University Hospital beginning in July 1961 and two will train in radiology elsewhere; all five were good students.

Eight residents are in the department this year. The division of radiation therapy has also established a residency exchange program with Johns Hopkins Hospital, Temple University Hospital in Philadelphia, and the Mt. Sinai Hospital in New York City.

The six part-time members of the staff,

who volunteer their services to the department, contribute greatly to the quality of undergraduate teaching and to the resident training program.

The department also conducts a School of X-Ray Technology for University Hospital. Graduates of the two-year course average about eight each year.

Research

The original work that is being done in the department's division of radiation therapy is attracting international attention. Perhaps the most outstanding piece of research thus far has been Dr. Bloedorn's development over the past four years, in collaboration with Dr. R. Adams Cowley, of a method for treating bronchogenic cancer with a combination of cobalt irradiation and surgery.

The National Institutes of Health are sponsoring a cooperative study of this treatment (now known as the University of Maryland technique) by the nation's leading cancer centers.

Dr. Bloedorn's first original work was with interstitial radium. He is now developing, with the aid of about \$24,000 in grants from the American Cancer Society, a practical system of dosimetry for complex patterns of radium implants.

Another project, this in cooperation with Dr. John D. Young, is study of the treatment of cancer of the bladder by supervoltage irradiation, with and without surgery. This work is supported by grants from the National Institutes of Health totaling about \$30,000 over the past three years.

In collaboration with Dr. Cyrus L. Blanchard, Dr. Bloedorn is studying combined therapy for advanced carcinoma of the head and neck, using cobalt-60 irradiation and radical surgery.

Several trainees have come to the divi-



Jewell Edel properly positions the head of a patient for a procedure in which different parts of the brain are x-rayed.

sion from South America, France, and other parts of the world, to learn the various new procedures being developed here. Visitors have been attracted from England, South America, Italy, France, and Japan.

In the diagnostic division, Dr. Boudreau is devising means of visualizing coronary arteries and has developed his own method for phasing the injection of contrast media with the cardiac cycle so as to minimize both the amount of opaque medium that is required and the degree of anoxia produced in the cardiac muscles.

Summer fellows have also contributed to the research effort; one student won a \$100 prize from the American Heart Association for a report of his radiographic method of visualizing coronary arteries.

Plans for the Future

One of the most promising projects is

a cardiovascular laboratory to be opened in late 1960 on the second floor of University Hospital within the Department of Radiology, for selective angiography accompanying cardiac catheterization.

This laboratory, which will be under the direction of Dr. Boudreau for the Department of Radiology and Dr. Leonard Scherlis and Dr. Robert Singleton for the division of cardiology, will be among the first to permit x-ray movies to be made of coronary circulation, as visualized by selective dye injection during catheterization.

With closed circuit television hooked up to the new equipment, it should be possible to broadcast the angiocardiology to Gordon Wilson Hall or anywhere else in the hospital.

This equipment opens up possibilities for research in all phases of cardiovascular radiology.

The laboratory will represent an investment of about \$30,000 in new x-ray equipment and another \$30,000 for other equipment for radioactive isotope studies and other diagnostic techniques.

In early 1961 a new section of radiation physics and radiobiology will be established, under the direction of a well-known radiation physicist and radiobiologist, Dr. Eugene Robinson, who will conduct basic research in the effects of radiation on normal and malignant tissues. The new section will explore methods of decreasing the sensitivity of normal cells to irradiation, and increasing the sensitivity of cancerous cells. The effects of radiation on wound healing will also be studied.

The division of radiotherapy will gain tremendous impetus this year with the acquisition of a betatron. The betatron itself is already on order as this article is being written, and installation will be-

gin when the needed funds (about \$400,000) have been secured. More than \$312,000 toward this goal has already been acquired from the following sources:

Hill-Burton funds	\$172,350
American Cancer Society	70,000
Filbert Foundation	65,000
Health and Research Services Foundation	5,000

The advantage of betatron is its versatility in producing two types of high energy radiation—x-rays and an electron beam. The electrons can be made to strike an internal target and produce a well-defined x-ray beam of 35-40 million electron volts, highly useful in the treatment of deep-seated tumors, or the electron beam can be used directly in irradiating a tumor.

Electron beam radiation, in which the malignant tissue is itself the target for the negatively charged particles, is new in the treatment of cancer but has already shown such promise that it will probably someday become universally used. It is equally useful for superficial and for internal tumors and in every instance, if properly used, the irradiation is confined precisely to the tumor.

Here, as in all radiology, the knowledge of the radiologist becomes much more important than the powerfulness of the equipment. Dr. Bloedorn's and Dr. Cuccia's experience with the betatron at the M. D. Anderson Hospital in Houston has given them familiarity with the possibilities of this new form of irradiation. Almost certainly, their having a betatron to work with at the University of Maryland will mean a great deal to the future improvement of cancer therapy by supervoltage.

With the installation of the betatron all facilities of the radiology department will be brought together. The headquarters of the department and all facilities for the

diagnostic division are now located in a new wing that abuts the A wing of the hospital. Space below this on the first floor and basement, now used for storage and supplies, is to be converted for use by the division of radiation therapy. This new unit will be known as the Martha V. Filbert Radiation Center.

The betatron, the cobalt unit, conventional x-ray therapy equipment, and examining rooms for the daily care of patients will be located on the basement floor. Offices for Dr. Bloedorn and his staff and examining rooms for follow-up study of patients will be directly above, on the first floor. Research facilities for the section of radiation physics and radiobiology will be located near-by on the first floor.

The diagnostic x-ray equipment, on the second floor, will be supplemented by additional equipment now being planned for the new outpatient building, scheduled for completion in 1965.

This kind of expansion on all fronts, Dr. Dennis believes, will inevitably benefit all activities of the department—teaching and research no less than clinical service. And to add to the stature of the teaching, Dr. Walton this year set up an endowment to establish the Henry J. Walton Distinguished Lectureship in Radiology.

Dr. Walton had already shown his continuing interest in the department by the gift of his rare collection of historic x-ray tubes, many of them dating back within months of Roentgen's original discovery.

Dr. Dennis's and Dr. Walton's hopes for the department are shared by every other member of the staff, who look forward confidently to developing one of the best radiology centers in the world, here in Maryland.

January, 1961



A betatron identical to this one in service at the S. Ambrogio Clinic, Milan, will be installed late in 1961 at the University of Maryland.

Biographical Notes

JOHN M. DENNIS, M.D., *Professor of Radiology and Head of the Department*

Dr. Dennis is a native of Maryland and received his B.S. and M.D. degrees at the University of Maryland.

After an internship at University Hospital he entered the U. S. Army in 1946. He was graduated from the Army School of Roentgenology and became chief of radiology at Langley Air Force Base.

In 1948 he returned to University Hospital for a residency in radiology. After a year as fellow in radiology at the Hospital of the University of Pennsylvania he came back again to the University of Maryland in 1951 as instructor and associate in the Department of Radiology and associate director of the Radioisotope Laboratory. He was appointed professor and head of the Department of Radiology in 1953.

Dr. Dennis has been instrumental in securing financial support for the department from many sources, including \$65,000 from the Filbert Foundation to be used with a \$70,000 grant from the American Cancer Society toward enlargement and further development of

the Martha V. Filbert Radiation Therapy Center.

He has also developed an X-Ray Museum in the department, which won an honorable mention award from the Radiological Society of North America and a merit award from the American Roentgen Ray Society.

Dr. Dennis serves as consultant at Mt. Wilson State Tuberculosis Hospital, Anne Arundel General Hospital, U. S. Army Hospital at Fort George G. Meade, and Cambridge Hospital.

He was recently elected vice president of the Maryland Division of the American Cancer Society and also serves on the society's executive committee, budget committee, and grant committee. He is a member of the adjuvant chemotherapy study group of the National Cancer Institute and a member of the house of delegates of the Medical and Chirurgical Faculty of Maryland.

Dr. Dennis is a fellow of the American College of Radiology. He reviewed residency programs for the American Board of Radiology in Boston and Philadelphia this past year.

He has written extensively about radiological subjects. He was invited this year to address the Pan American Medical Association in Mexico City on "Obstructive Uropathy in Infants and Children."

FERNANDO G. BLOEDORN, M.D., *Associate Professor of Radiology and Head of the Division of Radiation Therapy*

Dr. Bloedorn, a naturalized U. S. citizen, was born in Varginha, Brazil and received his medical degree from the University del Litoral Rosario, Argentina, where he also served his internship at the Hospital Centenario. For a number of years he was director of surgery in a private clinic in San Pedro, Argentina.

His training in radiation therapy was in European clinics—the Curie Institute of Paris, the Radiostationen of Copenhagen, the Radiumhemmet of Stockholm, Christie Hospital of Manchester, and the Royal Cancer Hospital of London. He served as senior resident in radiation therapy at the Francis Delafield Cancer Hospital in New York City.

From 1951 to 1955 he was associate professor of radiology at the Postgraduate School of Medicine of the University of Texas and associate radiotherapist at the M. D. Anderson Hospital for Cancer Research.

Dr. Bloedorn has been at the University of

Maryland School of Medicine since 1955, as associate professor of radiology and head of the division of radiation therapy. Since 1958 he has also served as assistant professor of radiology at The Johns Hopkins University School of Medicine.

He is a member of many professional organizations, including the American College of Radiology, the American Radium Society, the Inter-American College of Radiology, in which he is a member of the committee on education, and the Pan American Medical Association, in which he serves as secretary of the Section of Radiation Therapy. He is a member of the committee for comparative study of the end results in radiation therapy and chairman of the subcommittee on bronchogenic carcinoma of the National Institutes of Health.

He was recently elected to the Club de Telecobalthérapie, whose headquarters are in France.

Dr. Bloedorn has published many reports of original research, including contributions to a publication by the Fondation Curie, of Paris, reporting interstitial radium therapy of cancer and supervoltage therapy of carcinoma of the bladder and lung. He reported his work on combined irradiation and surgery in the treatment of bronchogenic carcinoma at a meeting of the American Radium Society in Puerto Rico. He was co-editor of the section on the head and neck of the 1959 Yearbook of Cancer.

ROBERT P. BOUDREAU, M.D., *Associate Professor of Radiology*

Dr. Boudreau was born in Syracuse, New York. He is an alumnus of Princeton University and received his medical degree from the Syracuse University School of Medicine.

He served internships at Wesley Memorial Hospital in Chicago and Mallory Institute of Pathology in Boston, with an intervening two years in the U. S. Army.

After a residency in radiology at the University of Pennsylvania Hospital, he was appointed staff radiologist there in 1953.

Dr. Boudreau came to the University of Maryland in 1954 as assistant professor of radiology and was appointed associate professor in 1960. His primary responsibility is supervising the department's neuroradiological and cardiocardiological activities.

He has been a member of the American College of Radiology since 1953. He is the author of a number of published reports, among

MEDICAL SCHOOL SECTION

them a paper on primary intraventricular tumors first presented at the Chicago meeting of the American Roentgen Ray Society.

CARLO A. CUCCIA, M.D., *Associate Professor of Radiology*

Dr. Cuccia is a native of Italy and a graduate of the Medical School of the University of Milano, where he served clinical internships in general pathology and microbiology, medical pathology and surgery, and medicine before his two-year residency in radiology at the Cancer Institute of Milano.

He was an assistant in the department of radiotherapy at the Cancer Institute from 1950 until 1953, when he was appointed senior fellow in radiotherapy at the M. D. Anderson Hospital in Houston. He became assistant radiotherapist at the hospital and assistant professor of radiology at the Postgraduate School of Medicine of the University of Texas in 1955 and in 1957 was appointed assistant head of the hospital's division of radiotherapy.

Dr. Cuccia has been with the University of Maryland since 1957, as assistant professor of radiology and assistant head of the division of radiotherapy, with much of his time devoted to patient care.

In 1959 Dr. Cuccia served as co-editor of the section on lymphoma and leukemia of the Yearbook of Cancer. In June 1960 he was invited to lecture at the Fondation Curie in Paris.

He is the author of many papers on gynecological radiotherapy.

JAMES A. LYON, M.D., *Assistant Professor of Radiology*

Dr. Lyon was born in Paterson, New Jersey and was graduated from Princeton University. He received his medical degree from Long Island College of Medicine.

After an internship at Orange (New Jersey) Memorial Hospital and surgical residencies at New York College's Postgraduate Hospital and Methodist Hospital in Brooklyn, he entered the U. S. Army, where he spent two years in the Medical Corps as a captain.

In 1953 he enrolled in the Graduate School of Medicine of the University of Pennsylvania and also served a residency in radiology at Pennsylvania's University Hospital.

Dr. Lyon has been with the department since 1956. He is director of the hospital's outpatient x-ray department and also director of its school of x-ray technology. He is super-

visor of pediatric radiology.

He acts as consultant at Springfield State Hospital and the Veterans' Administration Hospital at Perry Point, and is chairman of the Maryland State Radiological Society.

Dr. Lyon is co-author of a widely used brochure on pediatric radiography published by the Eastman Kodak Company. He collaborated with Dr. Wolfel in presenting an exhibit, "Smooth Muscle Tumors of the Thorax and Abdomen," at the November 1960 meeting of the American Roentgen Ray Society.

RAUL MERCADO, JR., M.D., *Instructor in Radiology*

A native of Puerto Rico, Dr. Mercado received an A.B. degree from the Polytechnic Institute of Puerto Rico and an M.D. degree from the St. Louis University School of Medicine. He served an internship at the Arecibo District Hospital in Puerto Rico and a residency in radiology at University Hospital.

In 1957-58 he was American Cancer Society Fellow in Radiology in the department and since then has served as instructor on the staff.

Dr. Mercado is a diplomate of the American Board of Radiology and a member of the American College of Radiology.

He is the co-author, with other members of the department, of papers on the treatment of carcinoma of the bladder, on combined radical radiotherapy and surgery in the treatment of bronchogenic carcinoma, and on interstitial gamma emitters in radiotherapy.

DONALD A. WOLFEL, M.D., *Instructor in Radiology*

A native of Baltimore, Dr. Wolfel received B.S. and M.D. degrees from the University of Maryland and served his internship and residency in radiology at University Hospital. He was appointed to the staff of the department in 1958.

From 1953 to 1955 Dr. Wolfel served as a medical officer in the U. S. Army Medical Corps. During this time he developed an outstanding collection of slides illustrating fungus diseases of the lungs for the Armed Forces Institute of Pathology.

He presented an exhibit, "Smooth Muscle Tumors of the Thorax and Abdomen," at the November 1960 meeting of the American Roentgen Ray Society.

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UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

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Bulletin Correspondent

V. E. KRAHL

Proceedings

Oct. 19, 1960, Business and Program Meeting, Bressler Library. Officers elected to serve during the year 1960-1961 were:

President—DR. D. VINCENT PROVENZA, School of Dentistry.

Secretary—DR. SAMUEL P. BESSMAN, School of Medicine.

Treasurer—DR. DONALD E. SHAY, School of Dentistry.

Councillor—DR. LESLIE C. COSTELLO, School of Pharmacy.

A paper entitled "The Effect of Insulin on Amino Acid Incorporation Into Protein of a Cell-free System" was presented by Dr. Paul DeSchepper, Assistant Professor of Medicine, University of Louvain, Belgium. Dr. DeSchepper is presently a Research Fellow in the Department of Pediatrics of the University of Maryland School of Medicine. (See Abstract* following.)

Nov. 29, 1960, Program Meeting, Student Union Building. Owing to the conflict of teaching schedules with the time of our Wednesday afternoon meetings in the past, a new arrange-

ment has been instituted for the convenience of the membership. The Society will now meet for a cafeteria dinner in a special area of the Student Union Building Cafeteria at 5:30 P.M. At 6:30 P.M. the program is conducted in the Alumni Lounge on the second floor of the Student Union Building.

At our first meeting in the new location Dr. Norman J. Doorenbos, Associate Professor of Pharmaceutical Chemistry, University of Maryland School of Pharmacy, presented a paper entitled "Design and Synthesis of Heterocyclic Steroids of Possible Biological Interest." (See Abstract* following.)

*ABSTRACTS

The Effect of Insulin on Amino Acid Incorporation into Protein of a Cell-Free System. Dr. Paul DeSchepper, *Assistant Professor of Medicine, University of Louvain, Belgium, Research Fellow, Dept. of Pediatrics, School of Medicine, University of Maryland.*

It is now well established that insulin, *in vitro*, enhances the incorporation of labeled amino-acids into protein of isolated rat diaphragm. This could be a consequence of insulin stimulated transport of amino-acids across the

cell membranes. However, there is no direct proof to support this mechanism.

We like to report on an *in vitro* effect of insulin upon incorporation of amino-acids into the protein of a cell-free pigeon breast muscle homogenate.

We have shown, in a great number of experiments, that insulin definitely stimulates incorporation of label (3 C¹⁴ D-L Tryptophan) into protein. Boiled or KOH denatured insulin has no effects. The incorporation is dependent upon the concentration of insulin and independent of added adenine nucleotides. The stimulatory effect of insulin is completely washed out by adding nonradioactive D-L Tryptophan to the incubation medium, proving that the insulin effect is on tryptophan and not upon trace impurities of another radioactive compound that we have shown to be present in our C¹⁴ tryptophan.

These experiments point to an insulin effect non-related to any transport phenomena since we worked with a cell-free system. This implies that insulin should have a direct effect on the protein synthesizing mechanism in the cell.

Design and Synthesis of Heterocyclic Steroids of Possible Biological Interest.

Dr. Norman J. Doorenbos, *Associate Professor of Pharmaceutical Chemistry, School of Pharmacy, University of Maryland.*

The lecture was a review of some of the research completed during the past three years by a group of twelve graduate and post-doctoral students working with Dr. Doorenbos.

Steroids have attracted the attention of the pharmaceutical chemist because of the complexity of their chemistry and their usefulness as drugs. Less than 200 heterocyclic steroids are reported in the literature and only about 10% of these have been studied biologically. The belief that heterocyclic steroids, especially those with nitrogen as the hetero atom, will offer some new and powerful tools for the medical profession was expressed.

Steroids with conformations resembling natural hormones are strongly adsorbed by many types of proteins. Perhaps certain enzymes are adsorbing steroids without a change in biological activity. Such enzymes should also adsorb azasteroids and the change in physical and chemical properties of the steroid might cause a change in biological activity. This is one reason for believing that azasteroids may have pharmacodynamic properties not found in steroids.

It is hoped that some of the azasteroids will be useful as anabolics, and in the treatment of cancer, hormone imbalance, and cardiovascular diseases.

Less than 80 azasteroids are described in the literature. In this investigation over 150 new azasteroids plus 50 other new steroids have been synthesized. Nitrogen has been introduced into positions 2, 3, 4, 6, and 7 in the steroid ring system. The nitrogens have been included as lactams, amines, and quaternary salts. Such heterocyclic rings as tetrazole, thiazole, pyrimidine, indole, and quinoxaline have been fused onto ring A at positions 2, 3 and 3, 4.

Preliminary biological data has been obtained on some of these compounds. One azasteroid is three times as active as papaverine as a coronary dilator. Others have shown adrogenic, progestational, estrogenic, antiandrogenic, antiestrogenic, antiprogesterational, and anticancer activity.

Dept. of Radiology—Con't from p. xvii

Dr. Wolfel is a member of the American College of Radiology.

Voluntary part-time staff members:

Robert Armstrong, M.D.
Charles Davidson, M.D.
Nathan Hyman, M.D.
Rowden Rambo, M.D.
William Thomas, M.D.
William Wallop, M.D.

POSTGRADUATE COMMITTEE SECTION

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ELIZABETH B. CARROLL, *Executive Secretary*

Postgraduate Office: Room 201

Davidge Hall, 522 W. Lombard Street, Baltimore 1, Md.

"Medical Education is not completed at the medical school: it is only begun. Hence it is not only the quantity of knowledge which the student takes with him from the school which will help him in his future work; it is also the quality of mind, the disciplined habit of correct reasoning, the methods of work, the way of looking at medical problems, the estimate of the value of evidence."

WILLIAM HENRY WELCH, M.D.

A meeting of the full Postgraduate Committee was held at the Baltimore Union on Thursday, November 3, 1960, at which time projected activities for the year were reviewed.

Basic Electrocardiography

A three-day concentrated course devoted to a study of the principles of electrocardiography and the interpretation of the more frequently seen abnormalities will be given by Dr. Leonard Scherlis and his staff in January 1961. The keynote of this short course will be the use of EKG diagnosis in office practice. Lectures, slide material, and EKG readings in given clinical situations will be utilized. As of the date of submission of this report, maximum enrollment for this course has been reached.

Industrial Medicine and Occupational Health

The planning committee for this course met on November 9 to review the needs in the field of Industrial Health.

General Anatomy

Designed to prepare candidates for the examination of the American Board of General Surgery and Surgical Specialists. There is no strict rule governing

either the content or duration of the course. Students may dissect a complete cadaver or any particular region in which they are interested. Tuition is arranged according to content and duration.

Advanced Neuropathology

A course for the practicing pathologist. Duration is 5 week-ends. Class is limited. Tuition is \$125.00 including luncheon and dinner. Course includes basic neuroanatomy; review of neuropathologic techniques; lectures, demonstrations; and practical, work-shop exercises. Offered periodically.

Neuropathology

Designed to aid in meeting the requirements of the Specialty Boards in Neurological Sciences, and covers basic studies in diseases of the central nervous system. Duration is six months, full time. Tuition is \$200.00 plus \$10.00 laboratory fee.

Advances in Medical Science

To be given annually and designed to familiarize physicians with the recent advances in the medical science. The course is given in 19 periods of 2 hours duration, weekly, from January through May. Tuition is \$50.00.

MEDICAL SCHOOL SECTION

Clinical Anatomy

Designed to prepare candidates for the examination in Anatomy of the American Board of Surgery. This is a 90-hour course (3 hours a day, 2 days a week for 15 weeks) beginning with second semester of medical school, and given in conjunction with the regular sophomore

medical class. Tuition is \$150.00.

Clinical Practice

A diversified course to suit the broad interests of the physician in general practice. Duration is 5 consecutive days, given annually. Dates for 1961 are March 6 through March 10. Tuition is \$75.00. Schedule is as follows:

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE

First Annual Course in Clinical Practice

March 6-10, 1961

Monday, March 6, 1961

9:00 A.M.— Registration

9:30 A.M. Introductory Remarks and Announcements

9:30 A.M.— **PSYCHOSOMATIC MEDICINE** EPHRAIM T. LISANSKY, M.D.
12:30 P.M.

- | | |
|----------------------------------------------------|---------------------------|
| 1. Psychosomatic Medicine in Practice | EPHRAIM T. LISANSKY, M.D. |
| 2. Headache: Its Diagnosis and Management | WM. C. SPEED, III, M.D. |
| 3. The Use of Tranquilizers in General Practice | WALTER WEINTRAUB, M.D. |
| 4. The Recognition of Serious Psychiatric Disorder | RUSSELL MONROE, M.D. |

2:00 P.M.— **INFECTIOUS DISEASES** FRED R. McCRUMB, JR., M.D.
5:00 P.M.

- | | |
|--------------------------------------------------------------|----------------------------|
| 1. Host Response to the Infectious Process | T. E. WOODWARD, M.D. |
| 2. Treatment of Common Bacterial Infections with Antibiotics | R. B. HORNICK, M.D. |
| 3. The Problem of Antibiotic Resistant Infections | M. J. SNYDER, Ph.D. |
| 4. Modern Immunoprophylaxis of Disease | FRED R. McCRUMB, JR., M.D. |

Tuesday, March 7, 1961

9:30 A.M.— **E. N. T.** CYRUS BLANCHARD, M.D.
12:30 P.M.

- | | |
|---------------------------------|-------------------------|
| 1. Sinus Infections | GEO. C. ALDERMAN, M.D. |
| 2. Management of Nosebleeds | CYRUS BLANCHARD, M.D. |
| 3. T. and A. in Modern Practice | THOMAS R. O'ROURK, M.D. |
| 4. Meniere's Disease | CYRUS BLANCHARD, M.D. |

2:00 P.M.— **EYE** RICHARD RICHARDS, M.D.
5:00 P.M.

- | | |
|-----------------------------------------------|------------------------|
| 1. Crossed Eyes in Children | RICHARD RICHARDS, M.D. |
| 2. Office Management of Ocular Injuries | S. L. FOX, M.D. |
| 3. Ocular Manifestations of Systemic Diseases | RICHARD RICHARDS, M.D. |
| 4. Glaucoma | S. L. FOX, M.D. |

BULLETIN OF THE SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

Wednesday, March 8, 1961

9:30 A.M.— **PEDIATRICS**
12:30 P.M.

.....RAYMOND L. CLEMMENS, M.D.

- | | |
|---------------------------------------------|-------------------------|
| 1. Current Concepts of Infant Nutrition | RAY HEPNER, M.D. |
| 2. The Iron Deficiency State in Childhood | MARTIN K. GORTEN, M.D. |
| 3. Common Allergic Problems in Children | RICHARD L. LONDON, M.D. |
| 4. Selected Emotional Problems in Childhood | KURT GLASER, M.D. |

2:00 P.M.— **ELECTIVES**
5:00 P.M.

- | | |
|----------------------------------------------------------------|------------------------|
| 1. Free Time | |
| 2. Campus and Library | |
| 3. Visit Hospital Services | |
| 4. Attend Medical Science Lectures at 4:00 P.M. | |
| a. Physiology of the Adrenal Cortex | CLAUDE MIGEON, M.D. |
| b. Diseases of the Adrenal Cortex:
Diagnosis and Management | THOMAS B. CONNOR, M.D. |

Thursday, March 9, 1961

9:30 A.M.— **UROLOGY**
12:30 P.M.

.....JOHN D. YOUNG, M.D.

- | | |
|---------------------------------------------------------------------|-----------------------------|
| 1. Chronic Urethritis and Pyelonephritis | JOHN D. YOUNG, M.D. |
| 2. "Silent" Urinary Retention | WILLIAM S. KISER, M.D. |
| 3. Prophylactic Treatment for Urinary Calculi | JAMES R. POWDER, M.D. |
| 4. Abdominal Symptoms from Obscure Urologic Conditions in Childhood | EARL P. GALLEHER, JR., M.D. |

2:00 P.M.— **CASE REPORTS IN APPLIED PHYSIOLOGY**
5:00 P.M.

- | | |
|----------------------------|--------------------------|
| 1. Obstructive Emphysema | LEONARD SCHERLIS, M.D. |
| 2. Rheumatic Heart Disease | WM. S. SPICER, JR., M.D. |
| 3. Primary Aldosteronism | LEONARD SCHERLIS, M.D. |
| | THOMAS B. CONNOR, M.D. |

Friday, March 10, 1961

9:30 A.M.— **GENERAL SURGERY**
12:30 P.M.

.....C. REID EDWARDS, M.D.

- | | |
|----------------------------------------------------------------------|-------------------------|
| 1. Diverticulosis, Diverticulitis and Cancer | ROBERT W. BUNTON, M.D. |
| 2. Ulcerative Colitis | THURSTON R. ADAMS, M.D. |
| 3. Diagnosis and Management of Bleeding from Major Abdominal Vessels | THOMAS C. FLOTTE, M.D. |
| 4. Diagnosis and Management of Thoracic Injuries | EUGENE LINBERG, M.D. |

Category I credit will be allowed to members of A.A.G.P. for the number of hours that they are in attendance.



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ARTHUR G. SIWINSKI, M.D.

ALUMNI ASSOCIATION SECTION



President's Letter

Dear Fellow Alumni:

The time for organizing class reunions of those classes graduating in the years ending in 1 and 6 is growing short. A successful class reunion must begin with timely communications among the various members. Some classes are well on their way to completing their programs. This is especially true of the Class of 1936 the members of which, incidentally, will provide the scientific part of our Alumni Day activities.

Will the class captains of these years, serving in 1956, please contact the alumni office signifying their willingness to carry on for this year? We expect to be in a position to offer each class a revised list of graduates with their present addresses shortly after delivery of the new American Medical Association Directory. Since time is of the essence, it would be well to begin the ground work for the class celebrations as soon as possible.

The number of classmates you will be privileged to meet will depend on your individual efforts. Let's all work for a big turn out.

Faithfully yours,

ARTHUR G. SIWINSKI, M.D.

President

P.S. Your president's face is red! I forgot to pay my dues until reminded by the secretary that she had not received my check. Anyone else's face red?

Report of the Board of Directors of the University of Maryland Medical Alumni Association

August 16, 1960

It was reported the audit report had been received and a summary will be published in the October issue of the BULLETIN.

A report on Alumni Day, June 1960, was made and it was noted that 416 persons attended the banquet.

President Siwinski reported that Board action was necessary for appointment of three members to the General Alumni Council as no action had been taken by the Nominating Committee. A motion prevailed authorizing the president to request three members of the Board to serve on this committee until they, or their successors, are nominated at the June 1961 annual meeting.

An announcement was made that a gift in the amount of \$250 to the Student Loan Fund had been made by the Benjamin Stein Foundation and sent by Dr. Benjamin Stein, a member of the Class of 1935.

The reunion of the medical alumnus at the Southern Medical Association to be held in St. Louis in November was discussed, and report made on arrangements to date.

Discussion was held on publication of the alleged "Medical Alumni Directory" by the 1960 Editorial Board of the *Terra Mariac Medicus* and plans of the 1961 class to do likewise. It was moved, seconded, and carried that the Dean in charge of students' activities be advised that no such list is to be published in the future by the students and that no use of the alumni roster is to be made without permission of the Alumni Association. It was further suggested that an explanation be made in the BULLETIN that the

published list is not the alumni roster but rather a patrons' list obtained by the Class of 1960 in connection with the publication of the *Terra Mariac Medicus*, and that at the proper time an adequate list will come forth from the Alumni office.

Discussion was held on the aims and objectives of the Alumni Association and it was the expressed opinion that its program will increase in scope as records and financial status improve.

The necessity for beginning plans for Alumni Day, June 8, 1961 was stressed, and Dr. Harry M. Robinson, Jr. offered to assume the responsibility of Chairman of Arrangements. The president accepted the offer and appointed Dr. Ernest Cornbrooks and Dr. Howard Mays as co-chairmen.

The Board directed the treasurer to review the bank balance and authorized him, upon his discretion, to negotiate the transfer of funds not needed before the close of the year to an interest-bearing depository.

October 4, 1960

After acceptance of the minutes of the previous meeting, the monthly financial report was presented. It was noted that although the increase in dues has placed the Association in a more solvent position than at the same time last year, there were 112 less dues paying members at present than for the same period in 1959, and a discussion followed as to how to interest the alumni in becoming active members.

The desirability of having some type of activity for the entire alumni body during the year, other than the one annual meeting was voiced. A further investigation of the suggestion was advised.

A report of the reunion held in Miami in June was read from Dr. Vaughn; and

it was reported by the secretary that negotiations had begun for a reunion to be held at the time of the American Medical Association meeting in New York, June 1961.

It was reported that 2,000 double postcards had been sent to alumnus in the Southern area announcing the reunion to be held at the Southern Medical Association meeting in St. Louis on November 1, 1960.

A resolution was adopted designating the Eutaw Savings Bank as a depository and authorizing the president's signature as an alternate on withdrawals.

Authorization for the mailing of an announcement of Alumni Day, 1961, with expenditure of the necessary funds, was made. The secretary was directed to prepare a sample copy, obtain the estimated cost of printing, and amount of postage involved.

A discussion was held on the Editorial Board of the BULLETIN—how it was appointed, schedule of meetings, and its function.

Respectfully submitted,

J. EMMETT QUEEN, M.D.,
Secretary

Dr. H. M. Robinson, Jr., Speaks at Alumni Reunion at Southern Medical Association Meeting

REPRESENTING Dean William S. Stone, who was unable to attend, Dr. Harry M. Robinson, Jr., was the principal speaker at the reception and reunion of the graduates of the School of Medicine on the occasion of the annual meeting of the Southern Medical Association meeting held in St. Louis, October 31—November 3, 1960.

The meeting, which was held at the Sheraton-Jefferson Hotel, attracted a small group; however, Dr. Robinson reported a considerable degree of enthusiasm and a favorable reaction to the progress being made in the School of Medicine.

Dr. Robinson reported that he was also successful in introducing a resolution before the Southern Medical Association providing for an award recognizing original research performed by a young physician in one of the southern states in which membership of the Southern Medical Association is limited. There are to be three cash prizes.

The fellowship hour and buffet supper was under the direction of Dr. Robert A. Moses, an alumnus of the School of Medicine and a resident of St. Louis.

Maryland Alumni Leaders in Maryland Academy of General Practice

IN THE more than 12 years since the Maryland Academy of General Practice has functioned in the State of Maryland, seven presidents of the Academy have been Alumni of the School of Medicine. Most of these physicians have maintained an active interest in the American Academy of General Practice, the American Medical Association, or other scientific societies while conducting active general practices and serving on many local and state-wide committees.

Past presidents of the Academy include Drs. Charles F. O'Donnell of Towson, E. Irving Baumgartner of Oakland, Walter Anderson and Lauriston L. Keown of Baltimore, Robert W. Farr of Chestertown, Archie R. Cohen of Clear Spring and J. Roy Guyther of Mechanicsville.

ALUMNI DAY, 1961

ANNUAL festivities centering about Alumni Day will be held on **June 8, 1961**. The Class of 1911 will be honored at ceremonies included in the program of the annual banquet. Members of the Class of 1911 will be presented their 50-year honorary certificates.

Scientific Session Under Development

The Scientific Session for Alumni Day is being organized under the sponsorship of the Class of 1936 through a committee headed by Dr. Gibson J. Wells. Thus far speakers will include Drs. David M. Spain of New York and J. Morris Nicholson of Boston. Other activities include the annual meeting of the Alumni Association, tours of the new University facil-

ities (completed and under development), and the annual Alumni luncheon.

Presentation of the Alumni Honor Award and Gold Key will be made. As customary, the recipient of the honor will be announced in the April 1961 BULLETIN.

Alumni are urged to make early reservations for hotel space, reservations being available through the Alumni Office. Members of the five-year anniversary classes will receive special attention through the Alumni Office and will be assisted in the organization of their class activities as is customary.

Members of the Class of 1911 honored on the occasion include the following:

1911 GRADUATES TO RECEIVE 50-YEAR HONOR CERTIFICATES

June 8, 1961

Baltimore Medical College

DR. WILLIAM F. BECKNER
DR. LAWENCE F. BOLAND
DR. FRANK J. BROSCHE
DR. LAWRENCE A. CAHILL
DR. FRED GLOVER CAMPBELL
DR. ANTONIO ESCARRA FERNANDES
DR. JAMES C. FRYE
DR. GUSTAVE A. CORISSE
DR. JITSUZA HAYASHI
DR. HOWARD KEMP
DR. JOSEPH JACOBSON
DR. ALFREDO LASSISE RIVERA
DR. J. L. MONTALVO-GUENARD
DR. LOUIS A. PERRAS
DR. JAMES EARL SPRINGER
DR. GEORGE L. STRAUB
DR. RICHARD WHITE TREVASKIS
DR. WILLIAM H. TRIPLETT
DR. ERNEST L. WILSON

College of Physicians and Surgeons

DR. GEORGE K. ALLISON
DR. SAMUEL ARONOVITZ
DR. CARL J. BAUMGARTNER

DR. WM. THOS. GOCHE
DR. EDWARD ST. C. HAMILTON
DR. NATHAN S. HANELLIN
DR. HOWARD ENGLER HARMAN
DR. CHARLES C. HARMER
DR. JOHN F. HOGAN, SR.
DR. FRANCIS HUTCHINSON
DR. FRANK LESLIE JENNINGS
DR. JOSEPH B. KILBOURN
DR. ORAM R. LAWRY
DR. JOHN BENEDICT MAKIN
DR. ROBERT J. McDOWELL
DR. JACOB MENDELVITZ
DR. ISIDORE MICHEL
DR. HERMAN SIMMONS MILLER
DR. EDWARD J. PINKUS
LT. COMM. ROBERT ED. STACK
DR. KARL HADDON TRIPPETT
DR. GEORGE P. WALLER, JR.
DR. N. B. WHITCOMB
DR. LOUIS V. WILLIAMS
DR. W. F. ZINN

University of Maryland

DR. ARCHIE EUGENE BROWN
DR. WM. LUTHER BYERLY

ALUMNI ASSOCIATION SECTION

DR. JAMES E. DIEHL
DR. RICHARD C. DOBSON
DR. LOUIS H. DOUGLASS
DR. CHAS. LEIBOLD DRIES
DR. OTTO FISHER
DR. ISADORE HIRSCHMAN
DR. ABRAHAM HORNSTEIN
DR. JOHN THOMAS HOWELL
DR. KENNETH BARZILLAI JONES
DR. CHAS. HUTCHINSON KEESOR
DR. CHAS. EDWARD KERNODLE
DR. CHARLES R. LAW, JR.
DR. ISAAC MICHEL MACKS
DR. MANUEL EULALIO MALLEN
DR. WM. CLINTON MARETT
DR. WALTER S. NIBLETT
DR. JOHN OSTRO
DR. THEM. JULIAN RAMIREZ
DR. STANLEY HENRY RYNKIEWICZ
DR. HARRY B. SCHAEFFER
DR. DALLAS C. SPEAS
DR. JOSEPH STOMEL
DR. EMMET O'BRIEN TAYLOR
DR. JOSEPH ENLOE THOMAS
DR. GAFTON DENT TOWNSHEND
DR. RALPH JAMES VREELAND
DR. SYDNEY WALLENSTEIN
DR. CHARLES A. WATERS
DR. JAVA C. WILKINS
DR. RICHARD LLOYD WILLIAMS

The Arthur M. Shipley Award of the Southern Surgical Association

IN 1958, the Southern Surgical Association established the Arthur M. Shipley Award in honor of a former member and an outstanding member of the Southern Surgical Association, Dr. Arthur M. Shipley, formerly Professor of Surgery in the School of Medicine. The first recipient of the annual award was to Dr. Felda Hightower of the Department of Surgery of the Bowman Gray School of Medicine, Winston-Salem, N. C.

Dr. Hugh A. Bailey of Charleston, W. Va., a pupil and a great admirer of Dr. Shipley, provided the funds for the annual award as a legacy, the award to be given for an outstanding presentation by a member of the Southern Surgical Association.

Dr. Hugh A. Bailey, former Chief of Staff of the Charleston General Hospital, Charleston, W. Va., died on October 28, 1958. A native of Vass, N. C., and a graduate of Davidson College, Dr. Bailey received his degree from the University of Maryland in 1928. He served an internship and surgical residency under Dr. Arthur Shipley at the University Hospital in 1932, following which he acted as chief surgeon at the Kernan Hospital in Baltimore and served also as Instructor in Surgical Anatomy at the School of Medicine. He then began the practice of surgery in Charleston, W. Va., rising to Chief of Staff and Chief of Surgery at the Charleston General Hospital.

Dr. Bailey's generosity led to the foundation of the Arthur M. Shipley memorial in honor of his former teacher. Dr. Bailey also established a similar award in surgical nursing at the University of Maryland School of Nursing.

In his biography, Dr. George H. Yeager stated "He was an untiring worker in trying to bring about better hospital service to the patient and better teaching methods to both the young doctor and young student nurse."

Invest in the future health of the nation and your profession

Give to medical education through AMEF
American Medical Education Foundation



535 N. Dearborn St.
Chicago 10, Ill.

Class

NOTES

ELSEWHERE in this edition you will find a "tear out" page, for reporting *Alumni News* to the BULLETIN. This is not an idle gesture.

Your achievements, fellow alumnus, are of interest to your classmates. They constitute a reward to the faculty, are a challenge to the younger physicians, and are an item of prestige for the University. Please cooperate with us by forwarding news of yourself or any alumnus to the BULLETIN. Thank you.

P & S 1895

Harry Knight Owens of Elkins, W. Va., died recently.

Class of 1896



Jesse C. Coggins still continues active at the Laurel Sanitarium, Laurel, Md., which he founded 55 years ago and of which he has served as Medical Director since that time.

A native of Baltimore, Dr. Coggins was born July 8, 1874. He attended the public schools of Baltimore and graduated from the College of Physicians and Surgeons in the Class of 1896. He then served on the Staff of the Spring Grove State Hospital for nine years, gaining

much knowledge in experience with patients and their families. In 1905, in partnership with Dr. Cornelius De Weese, he founded the Laurel Sanitarium, established on 163 acres of rolling land purchased from Stephen Gambrill, former president of the Chesapeake and Ohio Canal Company. A large building was constructed.

Expansion of the sanitarium has progressed to the present capacity of 90 private women patients, two full-time physicians and 42 other personnel now housed in four main buildings and five cottages. Three registered nurses supervise the practical staff and the patients' activities.

Dr. Coggins' many years of activity and vast experience in the sanitarium have qualified him as an expert advisor and counsel not only to the staff but to those members of the patients' families who seek it. The entire organization of the medical and psychological services is in accord with the most modern requirements and latest ideas in geriatric care and rehabilitation. Dr. Coggins is a Life Member of the American Medical Association and the American Psychiatric Society.

Class of 1897

Isaac Cockey Dickson of 4611 Old Frederick Road, Baltimore, Md., died on August 26, 1960.

Francis Alan G. Murray of Box 85, LaVale, Md., died recently.

P & S 1897

Thomas J. McLarney of 27 Farmington Avenue, Waterbury, Conn., died July 27, 1960. Dr. McLarney was 84.

B. M. C. 1897

Patrick A. S. Grady of 104 School Street, Clinton, Mass., died on August 12, 1960. Dr. Grady was 86.

ALUMNI ASSOCIATION SECTION

Class of 1898

Edward Elmer Lamkin, formerly of Dorchester County, died at his home in the Homewood Apartments, Baltimore, Md., on August 24, 1960.

B. M. C. 1900

Eugene H. Doble of Presque Isle, Me., died of generalized arteriosclerosis on June 29, 1960. Dr. Doble was 85.

Class of 1900

James S. Akehurst died on October 18, 1960 at his home, 4012 Park Heights Ave. Dr. Akehurst was 87.

For many years Dr. Akehurst practiced in Harford County and then came to Baltimore where he practiced in Pimlico, West Arlington, and Park Heights sections of the city until his retirement shortly after World War II.

Walter F. Wickes died at his home, 12 Bishops Road, Baltimore on November 8, 1960. He was 83.

A native of York, Pa., Dr. Wickes was a graduate of St. John's College in Annapolis but following his graduation from the School of Medicine devoted his life to financial affairs and never practiced.

P & S 1902

Dwight P. Cruikshank of Lumberton, W. Va., died August 10, 1960, aged 85.

Class of 1904

Charles Layman Parks of 907 Short Avenue, Fairmont, W. Va., died on July 21, 1960 at the age of 81. Death was due to cardiovascular disease and diabetes.

B. M. C. 1905

William Dwyer Ducey of 165 Prospect Street, Brockton, Mass., died June 9, 1960 of pulmonary embolism. Dr. Ducey was 79.

P & S 1906

Arminus Blair Lyon of Ulster, Pa., died on July 11, 1960 of arteriosclerotic heart disease. Dr. Lyon was 79.

Class of 1907

Albert E. Perron of 56 N. Main Street, Fall River, Mass., died recently.

Class of 1908

Harold H. Palmer of 36 South Main Street, Plymouth, N. H., was recently honored on the occasion of the golden anniversary of his practice of medicine. Dr. Palmer was among four physicians honored by the New Hampshire Medical Society at the concluding luncheon of the annual meeting at the Mount Washington Hotel in Bretton Woods, N. H.

The son of Dr. Haven Palmer and Lucy Ellis Palmer and a native of Plymouth, N. H., Dr. Palmer was licensed in New Hampshire in 1910 two years after his graduation from the School of Medicine. An obstetrician, he was made a life member of the Grafton County and New Hampshire Medical Societies in 1953.

B. M. C. 1909

Edward Michael Looney of 346 Essex Street, Salem, Mass., died on August 2, 1960, aged 78.

Class of 1909



Charles B. Korns of Sipesville,

Somerset County, Pa., and an outstanding citizen, was the recipient of the 1959 Pennsylvania General Practitioner of the Year Award.

A native of Jenner Township in Somerset County, he was reared on a farm there and attended the public schools and local normal schools of that district. He taught three terms of school in his home district and acted as tutor in Latin and Greek for two years while teaching in school. Later he attended and graduated from the Franklin and Marshall Academy in 1905, entering the Baltimore Medical College and graduating with honors in 1909. After being licensed, he started to practice medicine in Sipesville, Pa., a large farming and coal mining section, where he lives today. A son, Dr. Miller J. Kornis, is now actively practicing in Somerset Borough, Pa., and is a member of the medical and surgical staff of the Somerset Community Hospital.

The elder Dr. Kornis is a staff member of the Somerset Community Hospital and has served several years as its Chief of Staff.

An ardent student, philanthropist, public-spirited citizen, and farmer, Dr. Kornis' life has been interesting not only from a scientific point of view but from the many facets of his wide interest and his many interpersonal contacts. He has been a true community leader and an honored citizen most worthy of the award which was recently presented to him.

Class of 1910

Benjamin Kader of 6901 Fieldcrest Road, Baltimore, Md., died on October 9, 1960.

Vernon Hastings McKnight of 113 Bridge Street, Elkton, Md., died June 5, 1960 at the age of 74.

P & S 1911

John F. Flynn of 449 Washington Avenue, Bridgeport, Conn., died May 21, 1960 of coronary occlusion. Dr. Flynn was 74.

P & S 1912

Albert William Crews of South Miami, Fla., died August 19, 1960 at the age of 79.

Class of 1912

Milford Hinnant of Micro, N. C., died of coronary occlusion on August 2, 1960. Dr. Hinnant was 74.

P & S 1913

Clyde L. Seitz of 3 Manchester Street, Glen Rock, Pa., died May 31, 1960. Dr. Seitz was 72.

Class of 1914

Louie Mixson Limbaugh of 117 W. Duvall Street, Jacksonville, Fla., died July 31, 1960 of hepatic cirrhosis. Dr. Limbaugh was 67.

Class of 1915

John C. Woodland recently has been retired from his career as Colonel in the United States Army Medical Corps. Dr. Woodland has had a distinguished and varied career which has included considerable investigative work concerning virus and rickettsial diseases.

Following his graduation from the School of Medicine, he entered the Medical Corps of the United States Army in 1917 and saw active duty overseas in Germany from 1919 to 1921. He then served as a Medical Officer on numerous assignments including the Fitzsimmons General Hospital (1926-29), the Gorgas General Hospital in the Canal Zone (1929-1933), and the Army and Navy General Hospital (1933-1938). He served at Brooke Army Hospital, Fort

ALUMNI ASSOCIATION SECTION

Sam Houston, Texas from 1938 to 1947 at which time he served as Chief of Medicine both at the Army and Navy General Hospital and the Brooke Army Hospital. At the time of his retirement, he was Commanding Officer of Brooke Army Hospital, Fort Sam Houston, Texas.

Colonel Woodland is a Fellow of the American College of Physicians, a Diplomate of the American Board of Internal Medicine and a member of the American Trudeau Society. He was awarded the Army's Legion of Merit in 1942. Dr. Woodland has contributed a manuscript entitled "Bullis Fever, History, Clinical Manifestations and Laboratory Investigations" which will be published as a part of the history of Internal Medicine in World War II which comprises a section in the medical history of World War II. Other papers by Dr. Woodland include reports on "The Oral Transmission of Murine Typhus in Humans," work on "Acute Encephalitis," "Bullis Fever," and studies relating to the Immunology of Dengue Fever and Colorado Tick Fever. In his retirement, Colonel Woodland lives at 524 Valley Lane, Falls Church, Va.

Class of 1916

William Ernest Bickley of Pendleton, S. C., died on August 7, 1960 of coronary occlusion. Dr. Bickley was 68.

Samuel O. Pruitt of 715 Greenville Street, Anderson, S. C., died on August 10, 1960. Dr. Pruitt was 69.

Class of 1920

Benjamin Gold of Shelby, N. C., died June 4, 1960 of coronary occlusion. Dr. Gold was 66.

Class of 1921

Edwin J. Ward of 510 Park Avenue,

Baltimore 1, Md., died July 26, 1960. Dr. Ward was 66.

Class of 1923

William Bryce Hunt of East Center Street, Lexington, N. C., died on May 18, 1960 of coronary occlusion. Dr. Hunt was 64.

Class of 1924

Bryan P. Warren, now rounding out some 34 years of medical practice in Laurel, Md., has opened an additional wing of the Laurel General Hospital, a 14-bed modern building with modern equipment, which Dr. Warren operates in conjunction with his brother, Dr. John M. Warren. Dr. Warren's oldest son, Bryan P. Warren, Jr., is a pediatric psychiatrist in New York City.

Class of 1925

Joseph Nataro was a recent visitor to the Campus. Dr. Nataro plans an extensive tour of Europe during the summer of 1961.

Class of 1928

Alan John Maged of Suffern, N. Y., died June 1, 1960. Dr. Maged was 58.

William N. McFaul of 542 West University Parkway in Baltimore died September 21, 1960.

Class of 1929

Jacob H. Conn, Assistant Professor of Psychiatry at the Johns Hopkins University, was presented with the Award of Merit by the National Society for Clinical and Experimental Hypnosis for outstanding contributions to clinical hypnosis during the year 1960. Dr. Conn was also elected Chairman of the Society's three Examining Boards of Clinical Hypnosis (Dental, Psychological, and Medical) and President of the Board of Medical Hypnosis, all the honors being

conferred at the 12th Annual Meeting of the Society held in Washington, D. C., October, 1960.

Joseph Francis McGowan of Asheville, N. C., died on July 17, 1960 of a cerebral hemorrhage. Dr. McGowan was 57.

Class of 1930

Francis Fieling Reid of 2902 St. Paul Street, Baltimore, Md., died of acute congestive heart failure on July 21, 1960. Dr. Reid was 68.

Class of 1931

Philip Adalman was recently promoted to Visiting Ophthalmologist at the Queens General Hospital, New York City.

Edward W. Warren of 126 E Street, Ithaca, N. Y., died August 4, 1960 at the age of 57.

Class of 1933

Daniel R. Robinson, who for a number of years served as Director of the U. S. Veterans Administration Hospital at Fort Howard, Md., has been promoted to Area Medical Director of the Veterans Administration with offices at 402 East State Street, Trenton, N. J. The area included under Dr. Robinson's jurisdiction involves chiefly the Middle Atlantic States.

Class of 1934

Joseph Millett, Associate Attending physician in the Department of Internal Medicine at the Meadowbrook Hospital, Hempstead, N. Y., has been elected President of the General Staff of this 700 bed county hospital. Dr. Millett is the author of numerous papers relating to the field of internal medicine which is his specialty.

Class of 1935

Harold Henry Klein of 430 Wyoming Avenue, Scranton, Pa., died recently.

Class of 1936

A. Franklin McCauley died November 16, 1960. Dr. McCauley was 49.

Following his graduation from the University of Maryland, Dr. McCauley received his basic training and internship at the Hospital for Women of Maryland, followed by two years of residency in obstetrics and gynecology at the Union Memorial Hospital. He entered private practice in 1939.

Joseph G. Zimring, who practices at 222 Riverside Boulevard, Long Beach, N. Y., serves as Director of General Practice and Secretary of the Medical Board of the Long Beach Memorial Hospital, Long Beach, N. Y. Dr. Zimring is also councillor of the Medical Society of the State of New York and is President of the 2nd District Branch of that society.

Class of 1937

John Hannon Finn of Refugio, Texas died on July 30, 1960. Dr. Finn was 49.

Class of 1938

John J. Bunting was recently elected a Direct Fellow of the American College of Chest Physicians. Dr. Bunting, whose offices are at 4705 Montrose Boulevard in Houston, Texas, also serves as Lecturer in Medicine at the University of Texas Postgraduate School of Medicine in Houston. Dr. Bunting's clinical interests include active clinical Associate Professorship of Medicine at Baylor College of Medicine. He is also the founder and senior internist of the Montrose Diagnostic Center in Houston.

S. C. White resides at 776 University Avenue, Palo Alto, Calif. His brother, **Harry F. White**, is in practice at Salinas, Calif., his address being 67 San Joaquin Road.

Class of 1941

Pierson M. Checket has announced preliminary plans for the organization of a committee to arrange for the Class' 20th Reunion on June 8, 1961. Those interested should contact Dr. Checket at 1801 Eutaw Place, Baltimore 17, Md.

Joshua M. Perman has announced the removal of his office to 135 Central Park West in New York City. Dr. Perman limits his practice to psychoanalysis.

Class of 1943

Dr. F. Mason Sones, Jr. Active in Developing New Cardio-radiologic Techniques



F. Mason Sones, Jr., of the Cleveland Clinic, continues a very active investigative career through his interest in the development of techniques combining cardiac catheterization with high speed x-ray motion picture techniques, useful in the clinical application of roentgenology to the diagnosis of lesions in the central circulation.

Much of the work which Dr. Sones has done includes the development of unique apparatus and techniques for cinecardiography, his publications appearing not only in the *Cleveland Clinic Quarterly* but in many cardiac, pediatric, and

radiologic journals. Dr. Sones has been a recent speaker on many cardio-roentgenologic symposia and has collaborated with a number of authors in combined research projects relating to cardiac surgery and the interpretation of high speed roentgenograms in the diagnosis of cardiac lesions.

Dr. Sones' postgraduate training included an internship at the University Hospital, following which he served in the U. S. Army Air Force from October 1943 through August 1945. He then pursued a course of resident training in internal medicine and cardiovascular disease at the Henry Ford Hospital from 1945 to 1950. At that time he was appointed director of the Cardiac Laboratory and a member of the staff of the Cleveland Clinic Cardiovascular Disease section, a post which he has continually held. Dr. Sones was a recent speaker at a symposium at the School of Medicine, sponsored by the Division of Thoracic Surgery of the Department of Surgery.

Class of 1944

George Joseph Kreis, Jr., of 201 East Main Street, Elkton, Md., died August 29, 1960 as the result of injuries received in an automobile accident the day before.

Class of 1945

Frank A. Ayd, Jr. was recently a participant in a panel discussion relating to problems in psychopharmacology held in connection with the seventh annual meeting of the Academy of Psychosomatic Medicine which took place in Philadelphia on October 13-15, 1960.

Henry F. Maguire has announced the opening of an office for the practice of obstetrics and gynecology at the Alvarado Medical Center, 6330 Alvarado Road, San Diego 20, Calif.

Class of 1946

James A. Vaughn, Jr. has served as Chief of Staff of the South Miami Hospital for the year 1960.

Class of 1947

F. Robert Haase has joined in partnership with Dr. J. T. Noguera in the practice of otolaryngology. Their office will be located in Asbury Park, N. J.

John Gordon Morrow of Hahira, Ga., died on July 3, 1960. Dr. Morrow was 36.

Class of 1948

Frank J. Theuerkauf has removed his practice from 158 West 8th Street, Erie, Pa., to 864 Main Street, Conneaut, Ohio, for the practice of General Surgery. Dr. Theuerkauf is a member of the American College of Surgeons.

Phyllis Peterson Vaughn, who practices with her husband, Jim (1946), at Coral Gables, Fla., is serving as Instructor at the University of Miami, Department of Medicine. Dr. Vaughn has published a number of papers chiefly related to the studies on arthritis. Recent publications include "The Comparative Effects of Phenylbutazone and G 27202 (Metabolite I) in Patients with Rheumatoid Arthritis: An Assessment of Methods." The paper appeared in "Arthritis & Rheumatism" (April 1959) in collaboration with Drs. D. S. Howell and Iris Kiem.

Another recent publication is entitled "Improved Diagnostic Method for Rheumatoid Agglutinating Factor," a paper delivered at the interim session of the American Rheumatism Association held at the Mayo Clinic in Rochester, Minnesota in the latter part of 1958.

Class of 1949

Raymond M. Cunningham was a participant in a medical forum on the

use of vasodilators published in the November 1, 1960 number of *Modern Medicine*.

George W. Knabe, formerly on the faculty of the University of Puerto Rico School of Medicine, has moved to Vermillion, S. D., where he has taken up duties with the School of Medicine there.

Jordan M. Scher has published a monograph entitled "Chronic Schizophrenia" in collaboration with Dr. Lawrence Appleby and Dr. John Cumming.

The volume, published by the Free Press of Glencoe, Ill., appeared early in 1960. Dr. Scher is secretary of the American Ontoanalytic Association with offices at 679 North Michigan Avenue, Chicago, Ill.

Class of 1950

J. T. Noguera has announced the formation of a partnership with Dr. F. Robert Haase for the practice of otolaryngology. Drs. Haase and Noguera will be located at 601 Grand Avenue, Asbury Park, N. J.

Class of 1951

Calvin L. Young, a psychiatrist who practiced at San Mateo, Calif., died on October 31, 1960, of injuries sustained in an automobile accident near Redwood City, Calif. Dr. Young directed the new psychiatric wing of the San Mateo Community Hospital.

A native of Baltimore, Md., and a graduate of Haverford College, Dr. Young served for three years as a member of the staff of the Sheppard Pratt Hospital in Towson. Later he was on the staff in the state hospital in Agnews, Calif., prior to his appointment at San Mateo. Dr. Young was a member of the American Psychiatric Association and the American and California Medical Associations.

ALUMNI ASSOCIATION SECTION

Class of 1954

Ira N. Tublin has announced the opening of his office for the practice of Internal Medicine at 25 E. Wayne Avenue, Silver Spring, Md. In October, 1960, Dr. Tublin was appointed Clinical Instructor of Medicine at Georgetown University School of Medicine, Washington, D. C.

George H. Wall has announced the opening of his offices for the practice of pediatrics at 6402 Golden Ring Road, Baltimore 6, Md., and at 2104 Gwynn Oak Avenue, Baltimore 7, Md.

Class of 1955

Stanley P. Balcerzak, Jr. has completed his residency in internal medicine at Billings Hospital, University of Chicago. Dr. Balcerzak is now on active duty at the Walter Reed Army Hospital where he is engaged in hematologic research.

Class of 1956

Richard G. Farmer was awarded the degree of Master of Science in Medicine from the University of Minnesota on July 14, 1960.

Virgil R. Hooper has completed residency in anesthesiology at the University

of Michigan. This training was followed by a brief period of private practice in Midland, Mich. In September, 1960, Dr. Hooper was called to active duty with the United States Navy and is stationed at the U. S. Naval Hospital, Beaufort, S. C. Dr. Hooper writes "How are my cohorts from the Class of 1956?" (Replies may be made direct or through this column, Ed.).

Class of 1958

Samuel Ebenfeld has been named chairman of the Medical Social Welfare Committee of the Essex (New Jersey) County Medical Society. Dr. Ebenfeld also serves as President of the County Medical Society. He is presently serving a Residency in Pathology at the Martland Medical Center in Newark, N. J. Dr. Ebenfeld is also Deputy Medical Director of Civil Defense for the City of Newark.

Class of 1959

Herbert Ribner has completed a year in general pathology at the Montefiore Hospital in New York and has been appointed assistant resident in neurology for the year 1960-61. Dr. Ribner was a recent visitor to the Baltimore campus.

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School of Medicine
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NUMBER 2

Lumbar Puncture: Common Sources of Error

WILLIAM H. MOSBERG, JR., M.D. and RAYMOND K. THOMPSON, M.D.

IT IS BELIEVED that lumbar puncture was first performed in 1885 by Leonard Corning, an American neurologist, and in 1891 it was made a routine procedure by Quincke.² At the present time, most medical students have done one or more lumbar punctures prior to graduation from medical school and there is scarcely a clinician who has not done a spinal puncture at one time or another. Indeed many house officers and practitioners have an experience with the procedure sufficiently extensive that they could not accurately estimate the extent of that experience. Despite the wide acceptance and usage as a diagnostic and, at times, therapeutic procedure; errors in judgment, technique, and interpretation are not at all uncommon. As is the case so often with routine procedures, it is taken for granted that the individual understands the intricacies and implications of the procedure, and teaching emphasis is placed elsewhere. The purpose of this paper is to set forth our concept of the considerations which precede and follow the insertion of a needle into the lumbar subarachnoid space.

From the Division of Neurological Surgery, School of Medicine, University of Maryland, Baltimore.

Should the procedure be carried out?
We do not propose to set forth here all of the indications for lumbar puncture but we should like to discuss certain contra-indications, reservations, and qualifications to the procedure. First of all, one must often combat the aura of fear and superstition which surrounds spinal puncture. How often when informed that the procedure is contemplated, the patient will express reservation by relating a rumor of someone dying or becoming paraplegic after a spinal tap. This places the doctor immediately on the defensive, for if any morbidity ensues, either immediately or at some future date, it will likely be attributed to the spinal puncture. It is our belief that, barring allergy to the cleansing or local anesthetic agents and barring any break in sterile technique, that if there is present no intracranial or intraspinal mass lesion, if the needling is done at a proper interspace, no permanent complications will ensue. It will be noted that the preceding sentence contains a number of qualifications, and it is these qualifications which should be considered prior to embarking upon the procedure.

We rarely do more than inquire into

any history of preceding allergic manifestations in selecting agents for cleansing the back and providing local anesthesia. The clinical picture and differential diagnosis must be well understood before spinal puncture. We cannot emphasize too strongly the fact that patients with intracranial and intraspinal mass lesions may deteriorate rapidly following the change in pressure relationships pursuant to release of cerebrospinal fluid, and that this deterioration may result in death or permanent neurologic deficit. Admittedly these events do not occur often, but that is small consolation to the patient, his family, or to the neurosurgeon who is perhaps called too late to rectify a desperate situation. The defensive plea that the puncture was done carefully, that a needle of small bore was used, and that only a small amount of fluid was released is practically universal. It must be understood that after the needle has been removed an opening remains in the dura and arachnoid and that fluid may continue to leak out into the soft tissues for a considerable period of time after the actual puncture. This is not a purely theoretical consideration! On any number of occasions when doing a lumbar laminectomy 24 to 48 hours after a myelogram, we have visualized at operation cerebrospinal fluid leaking from the dural aperture. It is not a faulty technique which leads to this disastrous series of events but rather the underlying pathological process. It is believed that this type of complication is especially prone to occur in patients with cerebellar mass lesions due to herniation of cerebellar tonsils at the foramen magnum and with temporal lobe tumors due to herniation of the uncinate gyrus at the incisura of the tentorium. One has, though, seen patients with mass lesions

in other areas of the brain suffer a similar fate. The potential danger of doing lumbar puncture in the face of papilledema is widely appreciated. It has been our experience that chronic subdural hematoma, often not associated with papilledema and indeed often associated with a low normal or even subnormal cerebrospinal fluid pressure, is a lesion in which rapid deterioration and death not infrequently follow spinal puncture. This deterioration may not begin until four to eight hours after the procedure. We wish to emphasize also that an intraspinal tumor causing minimal to moderate or even no neurologic deficit may rapidly result in complete paraplegia or quadriplegia following lumbar puncture. Some indication of the frequency of this phenomenon is provided by a recent report⁶ in the Russian literature of 125 such cases. The circumstances described above may call for immediate neurosurgical intervention.

In summary then, we would advise that in spinal tumor suspects and in brain tumor suspects, especially those of the latter with papilledema, posterior fossa signs and symptoms, temporal lobe signs and symptoms, and with a clinical picture at all suggestive of a chronic subdural hematoma, that at least the whereabouts of a neurosurgeon be ascertained prior to embarking upon spinal puncture. It must be appreciated also that this neurologic deficit may be delayed in onset by at least a few hours or that it may come on immediately. We hope the reader will never undergo the emotional trauma to himself (not to mention the physical trauma to his patient) of suddenly seeing his patient in the midst of a spinal puncture go into a state of extensor rigidity and stop breathing. Should this happen, though, we believe

the individual doing the puncture should rapidly introduce through the spinal needle 5 to 20 c.c. of air in an effort to reduce the herniation which has occurred.

When the patient voices fears and superstitions before undergoing lumbar puncture, one cannot adopt a casual attitude that there is no danger. It can be said though that if there is no intracranial or intraspinal mass lesion, no permanent sequellae should occur. The possibility of post-spinal headache exists and will be discussed later in this paper. Practically always when the patient is reasonably apprised of the indications for his undergoing the procedure and the dangers, if untreated, of any underlying pathological process which might cause complications, he is quite willing to undergo the procedure.

Selection of needle. In a patient in whom an intracranial lesion is suspected, a rather small bore needle such as a #20 or #21 is usually satisfactory. If an intraspinal lesion is suspected and Queckenstedt testing will be an important consideration, a needle with a large bore (#18) should be employed. It is possible that in cases of purulent meningitis or subarachnoid hemorrhage, the collection in the subarachnoid space may be of too great a viscosity to flow through a small needle and a #18 needle may be necessary.

Insertion of needle. Puncture of the spinal subarachnoid space being done in the lumbar region is based on the anatomical observation that the spinal cord ordinarily does not extend below the upper part of the body of the second lumbar vertebra and that the spinal canal in the mid- and lower lumbar region is occupied by the cauda equina. Although it must be of extremely rare occurrence, one may encounter a patient with a spinal

cord which extends lower into the lumbar region. This is one of the reasons for our recommending that an effort be made to insert the needle in the lower lumbar region not above the interspace between the third and fourth lumbar vertebrae. A further reason is that it is sometimes difficult to identify the exact interspace being employed. We have found this to be often the case in short obese women with an exaggerated lumbar lordotic curve.

We wish to mention at this point the specific entity of lumbar extradural spinal abscess. These patients present ordinarily with some inflammatory component to the clinical picture and some evidence of lumbar and/or sacral nerve root involvement. The disease process consists of a collection of purulent material in the extradural space acting as a space-occupying lesion. The dura and arachnoid remain intact and prevent spread of the purulent material into the lumbar subarachnoid space. One can readily appreciate the almost inevitable occurrence of meningitis if the tip of the spinal needle traverses the abscess and then enters the subarachnoid space. Accordingly, when this process enters into the differential diagnosis, it is recommended that a size #18 spinal needle be employed, that it be inserted gradually, and that every few m.m. the stylet be withdrawn and that aspiration be done to establish the presence of pus. Once purulent material is encountered and a sample obtained for bacteriologic studies, the needle is withdrawn.

One is occasionally confronted with a situation in which only a few drops of fluid or indeed no fluid at all is obtained, even though he feels certain that the needle has entered the subarachnoid space. This may be due to the presence

of a spinal block above the lesion due to a spinal tumor or inflammatory process (*e.g.* tuberculous meningitis) or it may be that a spinal tumor is occupying the spinal canal at the level of the inserted needle. Some years ago, one of our associates¹ obtained cholesterol crystals through the needle at time of spinal puncture, thereby establishing the diagnosis of epidermoid at that level.

Measurement of cerebrospinal fluid pressure. Perhaps more errors are made in this aspect of the procedure than in any other. It is often recorded on hospital charts that cerebrospinal fluid pressure could not be measured because the spinal manometer was broken or the stopcock was stuck. Unless one is certain that cerebrospinal fluid pressure and dynamics are of no importance in that particular case, the procedure should be delayed until another manometer or stopcock is obtained.

The rate of flow of cerebrospinal fluid through the needle is often erroneously interpreted as an index of spinal fluid pressure. A number of papers¹⁰ have indicated unequivocally the lack of correlation between these two phenomena. Each clinician who commits this error has observed that when cerebrospinal fluid is flowing slowly he can bring about an abrupt and marked acceleration of the rate of flow by merely rotating the hilt of the needle.

Probably there is no practicing neurosurgeon who has not been called to see a patient on an emergency basis with the complaint that the cerebrospinal fluid pressure was elevated to some figure in excess of 300 m.m., only to find that the manometric measurement was carried out with the patient in a sitting position. The cerebrospinal fluid quite naturally rises higher in the manometer with the

patient in a sitting position than with the patient lying down. If a trephine opening were present in the skull and if a ventricular needle were inserted into the lateral ventricle prior to performing a lumbar puncture in the sitting position in a normal patient, the fluid would seek its level and the fluid in the manometer would rise to about the level of the ventricular system. Since ordinarily when a lumbar puncture is done in the sitting position, there is no ventricular cannula in place and one is not dealing with an open system, the fluid need not be expected to rise to quite that level. It is our practice when lumbar puncture is done in the sitting position to ignore the manometric reading as such but rather to record the pressure as related to the level of the external occipital protuberance (*e.g.* 5 cm. below the occiput). When measuring the pressure with a patient in the sitting position, one can very easily vary the manometric reading by having the patient sit erect, bend forward, etc. It should be remembered also that if the patient bends far forward, the factor of abdominal compression comes into play with a concomitant rise in cerebrospinal fluid pressure. Because of the factor of abdominal compression (as well as such pressure increase as is related to the patient being tense and holding himself rigidly), we recommend that wherever possible lumbar puncture be done with the patient in a lateral recumbent position, that the head of the bed not be elevated and that he have no more than one pillow under his head so that the spinal axis forms a straight line in the horizontal plane, and even though the insertion of the needle be accomplished with the patient in a foetal position (neck flexed, head bent forward, spinal axis in marked kyphosis, with

thighs and legs in marked flexion), that after the needle is inserted a few moments be allowed to elapse prior to measurement of pressure. During this time the patient is informed that there will be no further discomfort (to assist him in relaxing) and the head and lower limbs are moved from their position of exaggerated flexion to a more comfortable and relaxed position following which pressure measurement is carried out. If, on the other hand, the patient is delirious or for some reason has to be restrained during the period of pressure measurement, it will be noticed that as the patient strains the fluid rises in the tube and during the brief periods of rest between outbursts of resistive or combative behavior the fluid level in the tube is lower. In such circumstances one should record the lowest level in the tube to which the fluid falls and one should always make a notation as to the patient's state of consciousness and degree of cooperation or combativeness at time of pressure measurement.

Queckenstedt Testing. The usual reason for doing the Queckenstedt test is to determine the presence or absence of a spinal block. In such circumstances there is no reason to do a differential Queckenstedt test (*i.e.*, record the extent and rapidity of fluid rise in the tube when the jugular vein is compressed on one side and then when it is compressed on the other side) but rather both jugular veins should be compressed simultaneously. The only indication for differential Queckenstedt testing—and indeed the only reason other than a suspected intraspinal mass lesion for doing a Queckenstedt test—is in attempting to demonstrate the presence of an occlusion of a dural sinus. Even in these circumstances the test is of questionable value because

anatomically there is often a marked asymmetry of the two lateral sinuses.⁷ One of the lateral sinuses, usually the right, is the direct continuation of the superior sagittal sinus and the other of the straight sinus. The lateral sinus formed by the superior sagittal sinus is frequently the larger of the two and the other is at times rudimentary. We recommend against Queckenstedt testing in any other circumstances. There are those who recommend Queckenstedt testing in brain tumor suspects in an effort to determine the presence or absence of herniation of cerebellar tonsils, but we believe that this should not be done—indeed we think it possible that this maneuver could precipitate such a herniation. It has been our practice to carry out Queckenstedt testing only when an intraspinal mass lesion is suspected and in the occasional case where a lateral sinus occlusion is suspected. In cases of increased spinal fluid pressure we ordinarily recommend against Queckenstedt testing. It is to be remembered that when there is a free rise and fall of fluid in the manometer on bilateral jugular compression, it indicates only that the spinal subarachnoid space is intact over an area in the horizontal plane as large as the bore of the needle being employed. A normal response to Queckenstedt testing does not exclude the presence of an intraspinal tumor. As stated previously, we do not employ a needle with a bore smaller than size #18 in doing a spinal puncture when Queckenstedt testing is projected.

How much fluid should be removed and what should be done with it? When the cerebrospinal fluid pressure is elevated—at least when it is elevated above 300 m.m., we recommend that the stopcock be turned and that the fluid in the manometer only be removed and in-

spected. If the fluid be clear and colorless or xanthochromic, we recommend that the needle be withdrawn, and that a cell count and Pandy test be run on the fluid obtained. If the fluid be turbid and if the clinical picture is one of meningitis or meningo-encephalitis, we would recommend that 8 to 10 c.c. of fluid be removed in small increments, measuring the cerebrospinal fluid pressure after removal of each 1-2 c.c. If the pressure should drop precipitously—and especially if the pressure should suddenly drop to zero—we recommend immediate withdrawal of the needle for fear of herniation either at the foramen magnum or at the free edge of the tentorium cerebelli. If the fluid should be bloody and the clinical picture that of subarachnoid hemorrhage, it is probably well to remove only 2-3 c.c. of fluid and then withdraw the needle. One must bear in mind that brain abscess or focal encephalitis may accompany meningitis, that an intracerebral hematoma may be present in association with subarachnoid hemorrhage, and that such focal mass lesions may give rise to herniation of uncinate gyrus or cerebellar tonsils with worsening of neurologic deficit and death. Also in cases of ruptured intracranial aneurysm, there may exist the possibility of further bleeding being precipitated by lumbar puncture. In reviewing 37 cases of autopsied intracranial aneurysm several years ago, we found that 3 of these patients had died immediately following lumbar puncture or within a few hours.⁹

The methods of differentiating a bloody tap from bloody cerebrospinal fluid have been described many times. In the case of a bloody tap the fluid tends to clear and fractional collection of fluid in separate tubes will usually disclose clearing of the fluid. In the case of a

bloody tap, sometimes the fluid initially collected will be virtually pure blood and will clot on standing, whereas with bloody cerebrospinal fluid the appearance is usually not that of pure blood. A few drops of bloody cerebrospinal fluid on a piece of gauze or filter paper will homogeneously discolor the material over a small area, but in the event of a bloody tap there will usually be a central area of deep red discoloration and a peripheral area of lighter discoloration. Too often neglected, however, is the examination of the fluid for xanthochromia. In all cases of bloody cerebrospinal fluid and wherever any doubt exists that a bloody tap has been performed, we strongly recommend that the fluid be examined for xanthochromia. This may be accomplished by centrifuging a sample of the bloody fluid and inspecting the supernatant fluid or by merely letting the tube of fluid set for a few hours during which time the cells will settle to the bottom of the tube by gravity. Often it is impossible to detect slight xanthochromia (even by water comparison) in artificial light and accordingly when this situation is encountered at night we recommend that the fluid be retained until the following day to be examined by daylight. A method for quantitatively estimating xanthochromia with a Beckman photoelectric colorimeter has been described.⁵ It has been recommended by some that a cell count be made on bloody samples of cerebrospinal fluid in that the ratio of white blood cells to red blood cells will be of value in differentiating bloody tap from bloody cerebrospinal fluid. This is qualified somewhat by the fact that we occasionally see cases in which the blood in the cerebrospinal fluid, apparently by virtue of its irritating effect, evokes a marked white blood cell pleo-

cytosis. The Pandy and total protein are markedly elevated by the blood in the fluid, enzymatic action may lower the level of sugar in the cerebrospinal fluid, and not infrequently blood in the cerebrospinal fluid renders the serological tests for syphilis falsely positive. For these reasons, we recommend that samples of bloody cerebrospinal fluid be examined for xanthochromia, and perhaps that a cell count be made (though we do not ordinarily do the latter) but that no further examinations of the fluid be made.

In non-bloody samples of cerebrospinal fluid we routinely obtain the following examinations: appearance (presence or absence of opalescence, turbidity, xanthochromia), cell count and differential, Pandy (globulin), total protein, colloidal gold or mastic, and serological test for syphilis. If more than ten white blood cells are present we also examine the cerebrospinal fluid for sugar, chlorides, and routine bacteriologic studies for pyogenic organisms. If the white blood cell pleocytosis is one of lymphocytes rather than polymorphonuclear leucocytes, we also recommend that bacteriologic studies for tuberculosis be made, that the fluid be cultured on Sabouraud's media for fungi, and, where it appears indicated and an infectious disease laboratory facility is available, that studies for viruses be made. Such laboratories require for examination a sample (usually 10 c.c.) of clotted blood drawn in the active phase of the disease and another similar sample drawn in the convalescent phase in addition to approximately 10 c.c. of cerebrospinal fluid collected during the active phase of the disease. It has been observed that tumor cells from an intracranial or intraspinal neoplasm may be mistaken for white blood cells in the

cerebrospinal fluid.¹¹ Accordingly in cases of unexplained pleocytosis we also recommend that a sample of the fluid be examined by the pathology department for tumor cells. On rare occasions the cerebrospinal fluid pleocytosis may consist of predominantly large monocytes or even eosinophiles. There are those who state that meningitis or meningo-encephalitis may be present without any pleocytosis of the cerebrospinal fluid, but in our experience an increase in the number of white blood cells in the cerebrospinal fluid has been a *sine qua non* of such inflammatory processes. Our diagnostic problems have more often been concerned with cases of a non-inflammatory nature in which a cerebrospinal fluid pleocytosis was present. These have included cases of subarachnoid hemorrhage, brain tumor, and subdural hematoma.

Post-spinal headache. Post-spinal headache may follow any lumbar puncture and may continue to plague the patient hours, days, weeks, and, on occasion, apparently even months after the lumbar puncture was done. We believe it is well to explain to each patient about to undergo spinal puncture that headache may occur following the procedure, that if headache should occur it will last for a variable period of time but will not remain permanently, that if headache should occur it will be made worse if the patient elevates his head, that the headache is frequently associated with pain in the low back at the site of needle insertion and sometimes with suboccipital and neck pain, and that, although there is no known method of consistently preventing the headache, its chance of occurrence is lessened if the patient will remain lying down for a period of time following the procedure. The latter bit of

advice at least has the merit of causing the patient to incriminate himself rather than the physician if he fails to follow the advice given and does develop post-spinal headache. We think it is important to seek a history of previous lumbar punctures since a patient with a past history of post-spinal headache is probably more likely to have such a headache than a patient without such a history. It is not our purpose here to discuss in any detail the pathogenesis or treatment of post-spinal headache. For this information the reader is referred to treatises on these subjects.^{8, 12} It is though commonly accepted at present that post-spinal headache is due to sagging of the intracranial structures due to loss of cerebrospinal fluid with consequent traction on the superior cerebral veins, that this headache is accordingly aggravated by the patient elevating his head, and that the headache persists until the cerebrospinal fluid volume is replaced. The frequency with which pain at the site of lumbar puncture is present in patients with post-spinal headache, the relative infrequency of such pain in patients who do not have post-spinal headache, and our frequent observation at time of operation that cerebrospinal fluid continues to leak through the dural aperture following spinal tap; lead us to believe that post-spinal headache is perpetuated by leakage of cerebrospinal fluid through the arachnoidal and dural rents made at time of puncture, that the force of gravity will increase the amount of such leakage when the patient elevates his head or assumes a sitting or standing position, and that relief from headache is in some measure associated with the closure of these meningeal apertures. If these assumptions are correct, leakage of fluid at the site of puncture would be less likely with

the patient lying on his side than on his back, and even less likely with the patient lying on his stomach. A recent paper³ indicates that the incidence of post-spinal headache may be reduced appreciably by having the patient lie on his abdomen following the procedure. In this study the incidence of headache in 200 patients kept in a supine position for three hours after lumbar puncture was 36.5%, whereas the incidence of post-spinal headache was only 0.5% in 200 patients kept on the abdomen for three hours after lumbar puncture. A number of drugs have been recommended including caffeine sodium benzoate, Roniacol tartrate,⁴ etc. It has seemed to us that in cases of post-spinal headache in which there are associated complaints of nausea, vomiting, and dizziness, Dramamine may be helpful. Indeed, recently we have been employing Dramamine in some cases following myelography. For a number of years we have had the impression that patients with a low cerebrospinal fluid pressure were especially likely to develop post-spinal headache and we have noted a tendency in ourselves to advise a longer period of bed rest in this group of patients. This problem has been studied by Marshall⁵ and we agree with his conclusion: "Though there is a tendency for post-puncture headache to be associated with a low cerebrospinal fluid pressure, the association is not invariable, nor is a low cerebrospinal fluid pressure always accompanied by a headache."

803 Cathedral Street,
Baltimore 1, Maryland

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Santiago Ramón y Cajal as a Bacteriologist

CHARLES VAN BUSKIRK, M.D.* and ALBERTO PORTERA-SANCHEZ, M.D.**

THE WORK of Ramón y Cajal on the central nervous system, for which he received the Nobel Prize in Medicine in 1906, is well-known. Less well-known, perhaps, is his work in bacteriology, particularly cholera. This brief adventure lasted one year (1885) and preceded his work on the central nervous system, and perhaps influenced it to some extent. Although his interest in bacteriology resulted in only one year of work and in only one publication¹ (Fig. I), it did produce some fundamental observations for which Ramón y Cajal is not usually given credit, particularly the observation that dead bacteria can provoke the formation of antibody and confer immunity upon an animal.

The motivating force drawing his attention to bacteriology was the cholera epidemic of 1885. At that time Cajal had been introduced to the microscope only a few years and his interest had been in the field of general histology. In January 1884, at the age of 32, he had moved to Valencia (Fig. II). He had barely become settled, made friends, and explored the environs of his new home when the epidemic struck. This epidemic was the fourth great pandemic of cholera, which had actually begun in 1881 in the Middle East, with the Moslem pilgrims en route to Mecca. It reached Egypt in 1883, and Southern France, Italy, and Spain in 1884. It has been said that of 160,000

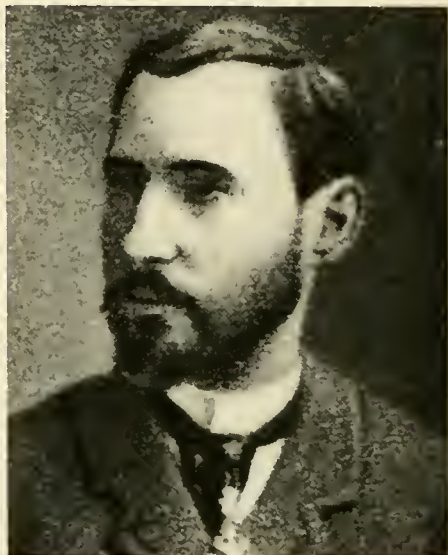


Fig. II. Ramón y Cajal at the time of the cholera epidemic in Valencia.

cases in Spain in the year of 1885, there were 57,000 deaths. Although cholera was well recognized as a clinical entity, it had only been the year before that Robert Koch had first described the cholera bacillus as the cause of cholera.² At the time of Cajal's work the etiology of cholera was not fully agreed upon by all investigators. Cajal, in his memoirs, describes the great preoccupation and conflict of understanding which physicians held with respect to the disease. Older conservative physicians attributed the disease to miasmas and treated it with the laudenum of Sydenham, while the younger adherents of Koch advised only the use of boiled water and well cooked food. So great was the pressure

* Division of Neurology, Department of Medicine, School of Medicine, University of Maryland.

** Department of Medicine, University of Madrid.

MICROBIO VÍRGULA DEL CÓLERA Y INOCULACIONES PROFILÁCTICAS

POR EL DOCTOR

Santiago Ramón y Cajal,

DE LA FACULTAD DE MEDICINA DE VALENCIA.

MEMORIA

Memoria leída en la Academia de Medicina de Zaragoza, el 10 de Julio de 1885, para celebrar la epidemia cólera y determinar acerca de ella la profilaxis y Ferrán.

ZARAGOZA

CONCLUSIONES.

- 1.º Es muy probable que el bacilo-vírgula descubierto por Koch en las deyecciones e intestino de los cólericos sea la causa específica del cólera morbo.
- 2.º El bacilo-vírgula de Koch debe considerarse todavía como una bacteriacea, perteneciente a la familia de los espirilos, que carece de esporos ó de formas de resistencia y se reproduce por fisiparidad. El complicado proceder genético descrito por el Dr. Ferrán no ha sido comprobado por nosotros.
- 3.º La acción colerigénica del vírgula no ha podido confirmarse completamente en los animales. Las experiencias de inyección duodenal en el conejillo de Indias están todavía sujetas á varias y encontradas interpretaciones.
- 4.º Las inyecciones subcutáneas, á pequeñas dosis, de los cultivos puros del coma son inofensivas en los animales y en el hombre. A grandes dosis, producen una infección particular que puede llegar hasta la muerte; pero no desarrollan el cuadro fenomenal del cólera morbo.
- 5.º Los animales inoculados por los comas en inyección subcutánea son preservados de los efectos de dosis dobles de cultivos. Pero esta acción preservativa no parece ser general, ni está probado que se extienda hasta el intestino, impidiendo el cultivo de gérmenes cólericos arribados por esta vía natural de infección.

de la sesión celebrada el 21 de Julio por la Excelentísima Comisión provincial de Zaragoza:

En el libro de actas de la Comisión provincial, y en la sesión celebrada en 21 de Julio último, aparece, entre otros, el acuerdo que copiado á la letra es como sigue:

«Primero. Pasar á D. Santiago Ramón un oficio de aplauso por la notable conferencia que ante la misma dió en la mañana del domingo 19 de Julio acreditando con su vasta erudición que no en vano goza de la fama de eminente micrografo.

«Segundo. Publicar por cuenta de la Diputación la Memoria que el mismo ha de presentar en su día sobre estudios micrografos del microbio del cólera.»

EL VICEPRESIDENTE,

FAUSTINO SANCHO Y GIL.

Fig. 1. Left, title page of the monograph on cholera by Cajal published in Zaragoza in 1885; center, conclusions of Cajal's monograph; right, resolution of thanks to Cajal from the Council of the Province of Zaragoza in July 1885 when Cajal presented his studies to the public.

of the situation that Cajal temporarily abandoned his histological work and hurriedly learned bacteriological techniques. He constructed incubators and set up in his home a laboratory for the study of the disease. He was encouraged in his efforts by the Provincial Council of Zaragoza which commissioned him to study the disease in the area of Valencia.

Coincident with the epidemic, Dr. Jaime Ferrán (Fig. III) arrived in Valencia advocating a preventive measure against cholera. This preventive measure, as he later published, was immunization with living cultures of the cholera bacillus. This concept gave rise to considerable debate among the medical profession. The fact that Ferrán kept secret for a time his method of preparing the vaccine gave rise to suspicions concerning his motives, but he is rightfully credited as being the first to attempt human vaccination for cholera. A commission from France visited Dr. Ferrán to investigate his claims and were met with such a reception² that they returned an adverse report on his methods. Dr. Ferrán at-

tempted to rectify the unfavorable reception which his method received in France but the damage had apparently been done. This is unfortunate, since his vaccination should have been as effective as any in cholera, and could have formed the basis for later successful trials, such as those by Haffkine.⁴ Subsequent reports have suggested that Ferrán was using impure cultures of the bacillus and have criticized the introduction of vaccination without more extensive animal experimentation. Although Cajal stated that he refused to be drawn into this controversy because he wished to maintain an independent attitude, it is apparent that he also questioned Ferrán's motives.

Cajal described the epidemic in Valencia as terrifying. He depicted the hospital of San Pablo as overflowing with patients and, indeed, records indicate that temporary hospitals were set up elsewhere, among them the silk market or famous Lonja de Seda, across from the public market place. Although several of his neighbors fell victim to the

disease his own family remained well, a fact which he attributed to the use exclusively of boiled water.

In July of 1885 Cajal went to Zaragoza where he presented his findings to the Provincial Council of Zaragoza and the interested public. In general, he concluded (Fig. IV) that the disease then raging in Spain was cholera and that it was caused by the bacillus of Koch. He was not inclined toward the procedure of Ferrán, believing that the statistics were faulty and that more data were needed before one could definitely say that Ferrán's method of immunization was useful or safe. During the summer of 1885, Cajal set up a small laboratory on the outskirts of Zaragoza and occupied himself with preparing a pamphlet concerning his investigations. He did not lack for new sources of the bacillus, since the epidemic had by then spread to the province of Zaragoza. This booklet was published in September of that year at the expense of the Provincial Government of Zaragoza (Fig. V). It contained, among other things, methods for staining and making permanent mounts of colonies of the bacillus. It contained also a comparative study of the microbes of waters and excrements which had some properties similar to the bacillus of Koch. He demonstrated that the bacillus of Koch was virulent for the guinea pig when introduced into the peritoneum and he also showed that it is possible to confer immunity to animals by injecting killed bacteria.

Cajal very probably deserves credit as being the first investigator to publish the important fact that dead bacteria provoke the formation of antibody and confer immunity upon an animal. The discovery of this fact has been variously attributed to Salmon and Smith⁸ and to

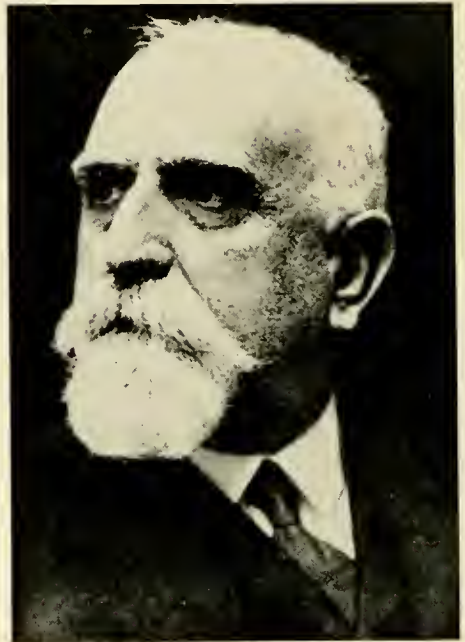


Fig. III. Dr. Ferrán.

Gamaleia,³ both of whom published their data after the date of Cajal's publication. Salmon and Smith found that heat-killed cultures of the bacilli which caused swine plague in pigeons would protect them from subsequent injections of lethal doses of virulent cultures. Gamaleia, working with cholera bacilli, found that pigeons and guinea pigs would die not only with injections of living cultures but with killed cultures, as well. He also observed that smaller doses of killed culture material would protect the animals from subsequent injections of lethal doses. It is quite possible that Cajal's notation that the cholera bacillus is virulent to guinea pigs when introduced intraperitoneally may also have been the first publication of this fact.

The failure of Cajal's original contributions to reach the attention of bacteriologists in Germany, France, and Italy is no doubt partly the result of his aban-

doment of this field of investigation on completion of the cholera study for the Province of Zaragoza. He made no further contributions in bacteriology. Moreover, another reason for his not receiving appropriate credit is the fact that his publication did not appear in a scientific journal but was in the form of a monograph printed in Zaragoza and in the Spanish language. His conclusions have been corroborated by other very outstanding investigators, among them Kolle,⁶ Wasserman,¹⁰ Voges,⁹ and Pfeiffer⁷ who conducted animal experiments similar to Cajal's. They also agreed with him in his judgment of Ferrán's work, stating that fundamental animal research was necessary before vaccination could be instituted in humans. Although Cajal did not receive any recognition for his work outside of the Province of Zaragoza, he did receive appropriate recognition in Zaragoza which was pleasing to him and undoubtedly benefited mankind, since as a gesture of appreciation the Province of Zaragoza presented him with a modern and magnificent microscope such as he could not have purchased from personal funds. There is no doubt that this microscope was of great assistance in enabling him to make his subsequent dis-

coveries in the field of neuroanatomy for which he is eminently famous.

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BOOK REVIEWS

Modern Scientific Aspects of Neurology, edited by John N. Cumings, M.D., F.R.C.P. Price \$13.00, 360 pages with 147 illustrations, 3 in color. The Williams & Wilkins of Baltimore exclusive U. S. Agents for Edward Arnold (Publishers), Ltd.

This well written volume contains chapters written by C. Coërs, M.D., of Belgium; Hildgard DeBach, M.D., Paul B. Diezel, M.D., and E. Klenk, M.D., of Germany; Larus Einarson, M.D., of Denmark; Franz Seitelberger, M.D., of Austria; F. S. Sjöstrand, M.D., of Sweden, and J. B. Finean, Ph.D., D.Sc., Derek Richter, M.R.C.S., L.R.C.P., M.A., Ph.D., and R.H.S. Thompson, M.A., D.M., and the editor John Cumings of Great Britain. Each author concentrates heavily on the non-clinical aspects of the nervous system and principally on neurochemistry. The book presents current material in an understandable manner. It is directed to those interested in the various aspects of the nervous system. The basic material in each chapter is explained adequately, and the techniques and methods used in proving the statements are well illustrated. Each chapter is annotated with a carefully chosen bibliography.

Chapters discuss: The histochemical techniques used to investigate the nucleic acids of neurons; the myoneural junction as to function and structure; the lipoidoses; the histochemistry of the demyelinating diseases; the study of the nervous elements by electron microscopy and x-ray diffraction, the chemistry of epilepsy; the chemistry and metabolism of lipids of the brain; and the esterases of the nervous system. In addition, there is of interest, the good results of cerebral biopsy in a group of diagnostic problems selected by the author and colleagues.

In summary, this is a useful book and a welcome addition to the libraries of those in the fields associated with neurology. It reviews

some of the latest neurochemistry and neurophysiologic research and research methods.

G. A. MOULTON, M.D.

The Human Lung. By Heinrich von Hayek, M.D., Ph.D. Price \$13.50. Pp. 372 with illus. Hafner Publishing Co., Inc., New York City, 1960.

The English medical literature in the particular field of diseases of the chest has been enriched recently by two original translations from the German. Both books represent important reservoirs of basic knowledge of the anatomy and physiology of the lungs. The pulmonary physiologic text is that of Rossier, Buehlmann, and Wiesinger entitled *Respiration: Physiologic Principles and their Clinical Applications*. It has been translated by Drs. Luchsinger and Moser of the Georgetown University School of Medicine.

Dr. von Hayek's book on the anatomy of the thorax and lungs has been translated and edited for use by English speaking physicians by Dr. Vernon Krah, Professor of Anatomy at the University of Maryland School of Medicine. Dr. von Hayek emphasizes throughout the functional implications of gross and histologic structure. Illustration in the form of pictures, drawings, and diagrams are profusely and well used in a very detailed presentation. Dr. Krah has enhanced the book by addition of material on the Jackson-Huber presentation of the segmental anatomy of the lung and with electron microscopic reproduction of details of the alveolo-capillary structure.

The rendition of this important book into English represents an important service to those not gifted with fluency in German, for which well-done service Dr. Krah should be congratulated.

PATRICK B. STOREY, M.D.



Dean's LETTER

Dear Students, Members of the Alumni, and Friends:

We tend to be engrossed by current problems without considering long-range needs. Therefore, I would like to devote this letter to the M.D. needs of Maryland by 1975. Because these needs are directly involved in the output of the medical education program of the state, it is of concern to all individuals involved in these programs.

It is estimated by the U. S. Government that Maryland's population will increase from 3.1 million in 1960 to 4.6 million by 1975. This is a 50% increase as compared to a 20 to 30% increase for the nation as a whole.

In estimating M.D. needs for Maryland the ratio of medical graduates to population seems to be the most realistic method that can be used in that this ratio has remained fairly constant over a 30-year period, and has been associated with a fairly constant physician population ratio. Using the 1959 Maryland medical graduate ratio to population, it is estimated that Maryland will need an average of 64 additional medical graduates per year to meet the 1975

requirements for M.D.'s if we are to maintain our present health standards and provide for continuous improvement.

Present plans for expansion of the medical schools in Maryland provide for an increase by 1962 from 100 to 128 entering medical students at the University of Maryland, and from 75 to 90 at Johns Hopkins, or a total increase of 43 over that now being enrolled, considering enrollment losses due to failures, etc. This leaves an average deficit of 25 entering medical students per year. This deficit can be made up in two ways—by migration of M.D.'s from other areas or an increase in third or fourth-year enrollments in the two medical schools by transfers from two-year schools. The possibility of a third medical school should also be considered. This is not likely, however, because medical education is best carried out in a university environment where there are strong graduate programs in the biological and social sciences. There are only two such university programs in Maryland, those at the University of Maryland and at Johns Hopkins University. Until a comparable additional university program should develop in Maryland, it would be unwise to develop an additional medical school.

In estimating the possibility of migration of M.D.'s to Maryland or lesser number of Maryland graduates leaving the state, it would appear that this would occur due to the fact that Maryland's rate of growth is greater than that of the country as a whole. In examining the potential for Maryland medical schools receiving two-year medical school graduates as transfers to its medical schools as entering students in its third-year classes, there appears to be considerable possibilities that this may occur. First, because there are a number of universities in the U. S. where two-year schools might be established and, secondly, this type of medical school increase is the most feasible economic expansion of medical education.

I believe it is now evident that no one who has analyzed the expansion that is occurring in the U. S. population can come to any other conclusion than there is a great need to increase the number of graduates from our medical schools. We must not lose sight of the need to maintain the quality of our medical graduates. This can best be done by insisting that existing medical schools are adequately developed and that the quality of medical teaching and research is given the opportunity to continue and to improve. Sincerely,

WILLIAM S. STONE, M.D.
Dean

Hospital Opens Newly Renovated Twelfth Floor

Expands Private Patient Area Once Occupied by House Staff

AS A PART of a continuing program to modernize the University Hospital, a newly renovated 12th floor, including the most modern concepts of hospital design, will open shortly.

The new unit designed for the use of private patients will serve as a model for the planning of further renovations in the University Hospital. One newly designed floor, the ninth, is already in use for neurosurgical patients. Seven other floors are scheduled for renovation in the future. All patient rooms will be either private or semiprivate and are arranged around a central nurses' station with which communication is maintained through a call system. All ancillary patient-care services are contained in the unit.

Psychiatric Institute Receives Large Grant

DR. EUGENE B. BRODY, director of the Psychiatric Institute, has announced the receipt of a grant of \$126,400 for the current year from the National Institutes of Mental Health. This grant will be used for purposes of training in psychiatry with some \$94,400 of the grant being used directly in the graduate program.

The program comprises three to five years of training for physicians who have completed their internships and wish to become eligible for certification by the American Board of Psychiatry and Neurology. This program is directed by Dr. Russell R. Monroe, formerly of Tulane University, and a national authority in psychiatric research and education. The remaining \$32,000 will support the teaching program in psychiatry for students of medicine.

Endowment Fund Receives Huge Bequest

DR. ISAAC C. DICKSON, of the Class of 1897, left the bulk of his estate of more than \$491,000 to the Trustees of the Endowment Fund for purposes of creating an endowment to provide medical education for deserving youths who could not afford it.

The bulk of his estate was left in trust for Mrs. Dickson, and the will provided that after her death a legacy of some \$5,000 should go to the South Baltimore General Hospital, the remainder of the estate going to the endowment fund to form the scholarship endowment to be known as the Isaac Cockey Dickson Memorial Fund.

Phi Delta Epsilon Annual Lecture

THE ANNUAL Phi Delta Epsilon Aaron Brown Memorial lecture was held on Wednesday, April 19 at 8:30 P.M. in the Health Sciences Auditorium of the School of Medicine.

Lieutenant Colonel Charles A. Berry, M.C., U.S.A.F., of the Division of Aerospace Medicine, Office of the Surgeon General, spoke on the subject "Problems of Man in Space Flight."

1961 Alice M. Band Lecture Held

DR. WILLIAM DAMESHEK, Professor of Medicine at the Tufts University School of Medicine and Director of the Blood Research Laboratory at the New England Center Hospital, spoke on the subject "Systemic Lupus and Its Meaning" on March 9, 1961, the occasion of the annual Alice Messinger Band Memorial Lecture in Hematology.

The lectureship was founded in honor of Dr. Alice M. Band, who was a member of the University's Department of Medicine from 1953 until her untimely death in 1957.

Faculty

NOTES

Department of Anatomy

DR. VERNON E. KRAHL, Professor of Anatomy, participated in a symposium at the Medical College of Virginia in Richmond on February 16, 1961. At this meeting, sponsored by the Richmond Area Heart Association, Dr. Krahl presented a discussion of the Vasculature of the Lung.

Department of Biological Chemistry



DR. EDWARD J. HERBST was advanced to the rank of Professor of Biological Chemistry on December 1, 1960. He is presently serving as Acting Head of the Department of Biological Chemistry.

Dr. Herbst has announced the appointment of Dr. George D. Duda as Instructor in Biological Chemistry, effective February 4, 1961. Dr. Duda received his Ph.D. in Biochemistry at Duke University. He served as Associate Biochemist at the Oak Ridge National Laboratory, Oak Ridge, Tenn., from 1957 to 1959,

then worked as a postdoctoral fellow at the Max Planck Institut für Zellchemie in München from 1959 to 1960. Dr. Duda's research pursuits include the metabolic fate of N^{15} amino acids, protein synthesis in bacteria, and the formate-pyruvate exchange reaction. In addition to his participation in the teaching of Biological Chemistry in the Medical School, Dr. Duda plans to continue his protein and formate-pyruvate studies.

Dr. Herbst and members of his staff are conducting a multi-faceted program of research supported by several new and continuing grants totaling approximately \$200,000. A grant of \$57,580 from the U. S. Public Health Service, covering a 5-year period, supports studies on the Metabolism of Putrescine and Related Amines. A grant of \$20,000 (covering a 2-year period) was awarded by the National Science Foundation for research on the Molecular Form and Function of Spermine in Animal Tissues. Work on Spermine Metabolism is also supported by a grant of \$4,794 from the Maryland Division of the American Cancer Society. A grant of \$16,971 from the Office of Naval Research, covering a 3-year period, is in support of a study on the Role of Putrescine in Microbial Metabolism. A training grant from the Atomic Energy Commission provides \$11,910 for the teaching of the application of isotopes in biochemistry and an additional \$8,000 for the purchase of radioisotope counting equipment.

DR. ARTHUR J. EMERY, JR., Assistant Professor of Biological Chemistry, has received a grant of \$10,000 (covering a 2-year period) from the National Science Foundation for his work with Mr. David Schatanoff (Graduate Student) on the Fundamentals of Protein Synthesis. Participating also in this research is Mr. Charles B. Leonard (Graduate Student)

who is an Instructor in Biochemistry in the School of Dentistry. A continuing grant from the U. S. Public Health Service provides approximately \$37,800 over the next 3 years for the study of the Fundamental Properties of Nucleoprotein Complexes by Mr. Stephen Lesko, Jr. (Graduate Student).

Other graduate students in the Department of Biological Chemistry include Miss L. Anne Hockley, who is studying the Swelling of Rat Liver Mitochondria, Mr. Joseph L. Colbourn, working on the Influence of Amines on the Ribosomes of Bacteria, and Mr. George Thomas, whose research is on the Structure of the Cytoplasmic Membranes of Bacteria.

Department of Dermatology

DR. FRANCIS A. ELLIS assisted in the offering of a special course in histopathology of the skin under the direction of Dr. Herman Beerman, the special course being held on the occasion of the American Academy of Dermatology annual meeting in Chicago, December 3 to 8, 1960.

Among departmental members who are active in the American Academy is Dr. Harry M. Robinson, Jr. who serves as a member of the Board of Directors. At the annual meeting Dr. Robinson read a paper entitled "Contraindications or Failures with Griseofulvin Therapy" and an additional contribution entitled "Bullous Urticaria Pigmentosa." A round table conference for dermatologists was also held under the supervision of Dr. Robinson.

The International Congress of Dermatology will be held in Washington on September 9 to 14, 1962. Preliminary plans include participation of the University of Maryland in the scientific programs, a symposium, and the presenta-

tion of live cases, demonstrations, and discussions for foreign physicians. Two other local hospitals will also participate in the symposium. These include the Johns Hopkins Hospital and the Walter Reed Army Hospital. Dr. Robinson will serve as chairman of the committee to organize the case presentations for the three institutions.

Department of Medicine

DR. THEODORE E. WOODWARD, Professor of Medicine at the School of Medicine, recently returned from Pakistan where he attended an international congress on cholera. Dr. Woodward is a member of the cholera research advisory committee of the National Institutes of Health, a group which has worked closely with the Southeast Asia Treaty Organization in promoting cholera research in the Far East.

DR. LUIS GONZALES of the medical faculty has received grants totaling \$28,000 to continue his investigation of the action of digoxin.

In collaboration with Dr. Lester Kiefer of the Department of Pathology and Dr. Y. C. Lee of the Department of Medicine, Dr. Gonzales seeks to discover the exact point where the digoxin serves its most useful purpose. For this work the digoxin labeled with tritium is used both experimentally and in certain selected instances of human autopsy material. Dr. Gonzales is assisted by Miss Evelyn Rice, research technician.

DR. JEROME K. MERLIS, Professor of Neurology, used the topic "The Electroencephalograph" as a subject for discussion at the meeting of the Chesapeake Association for Epilepsy held February 23.

DR. WILLIAM S. SPICER, JR., Associate Professor of Medicine and Head of

the Section on Pulmonary Diseases, has received a grant-in-aid of \$163,450 from the National Institutes of Health for the purpose of studying the effects of air pollution and weather variation on chronic pulmonary disease.

Department of Pediatrics

DR. THOMAS A. GOOD, Assistant Professor of Pediatrics, has been honored by the Western Society for Pediatric Research as the 1960 winner of the Ross Laboratories Pediatric Research Award.

This honor carries a stipend of \$1,000 and is made annually in recognition of outstanding research in pediatrics by an investigator not more than 35 years of age.

Dr. Good was the unanimous choice of the award committee, who paid recognition to his research in pediatrics but cited particularly his studies of the interrelationship of pituitary adrenal function and connective tissue biochemistry in the so-called collagen diseases.

Department of Pharmacology

THE 25th consecutive Christmas luncheon was celebrated again in 1960 by the Department of Pharmacology. A traditional event, the luncheon in 1960 featured a Christmas message by former Governor Theodore R. McKeldin. Honored guests included: Dr. Wilson H. Elkins, President of the University of Maryland, Dr. Albin Kuhn, Vice President of the University of Maryland, Dean William S. Stone, and Dr. Alan M. Chesney, Dean Emeritus of the Johns Hopkins University School of Medicine.

These traditional gatherings are not only a medium for the renewal for interpersonal friendships but are an inspiration appropriately coordinated with an

important season. For the new faculty member, the experience is unique. For the older professors, it is an annual event, dignified and memorable.

Preventive Medicine & Rehabilitation

DR. CLARA J. FLEISCHER, former Assistant Chief of Physical Medicine and Rehabilitation at the University of Illinois Research and Educational Hospital, has been appointed Assistant Professor of Physical Medicine and Rehabilitation.

A native of Poland and a graduate in pharmacy, Dr. Fleischer received her M.D. from the Medical College of Virginia, where she also served her internship. Her training in physical medicine and rehabilitation was at the Baruch Institute at the Medical College of Virginia and later at the McGuire Veterans' Hospital in Richmond.

Dr. Fleischer will assist Dr. Paul F. Richardson and will be in charge of outpatient work.

Department of Surgery

AMONG THE participants at the Twenty-Ninth Annual Meeting of the Southeastern Surgical Congress were two members of the medical school faculty. Dr. George H. Yeager, Professor of Clinical Surgery, presented a paper on the surgical considerations of peripheral vascular disease.

Dr. Ross Z. Pierpont, Instructor in Surgery, discussed vagotomy and gastric drainage in the treatment of peptic ulcer.

The meetings were held at Miami Beach from March 6-9, 1961.

DR. WILLIAM G. ESMOND, Assistant Professor of Surgery, has been awarded a continuation grant of \$15,000 from the National Institutes of Health toward the

support of open heart surgery at the University Hospital. The grant, which has been made annually for the past five years, has aided the medical school's Department of Surgery in the development of improved types of heart-lung machines, medical heat exchanges, and other apparatus to meet the needs of advancing techniques in open heart surgery. The equipment developed by Dr. Esmond is being currently used in medical centers throughout the United States and abroad.

DR. BEVERLY L. REYNOLDS, Instructor in Surgery at the School of Medicine, is assisting in the making of a teaching film for the American Institute of Biological Sciences. The film will serve to demonstrate the use of experimental animals in gastrointestinal research. Dr. Reynolds recently took one of his experimental animals to Kansas City for the actual filming and to participate by explaining to the audience present the nature of the experimental surgery and how such animals have contributed to man's knowledge of gastrointestinal activity. It is expected that the film will be one of some 120 teaching films now being produced by the American Institute of Biological Sciences for use in the teaching of biology throughout secondary schools in the United States.

Dr. Weston Named Assistant Professor in Psychiatric Institute

DR. DONALD L. WESTON, formerly Instructor in Clinical Psychology and Psychologist for the Child Psychiatry Service at the University of Colorado Medical Center, has been appointed Assistant Professor of Medical Psychology in the School of Medicine. In

this capacity he will work with Dr. Benjamin Pope, Associate Professor of Medical Psychology and Director of Psychological Services in the Institute. Dr. Weston will assume major responsibility for clinical psychological services in the Institute's newly established children's service which will bring together a number of existing outpatient clinics and which will cooperate with the Department of Pediatrics.

Dr. Weston is a native of Michigan and an alumnus of the University of Michigan, receiving the M.A. and Ph.D. degrees from Boston University. He later served as an intern in psychology at the Judge Baker Guidance Center in Boston. He was Chief Psychologist at the Walden Clinic for children in Concord, Mass., and consulting psychologist for the Pre-School Retarded Children's Program in Boston, Mass. He is a member of the American Psychological Association and of Psi Chi, a national honorary organization in the field of psychology. His publications include many articles on juvenile delinquency and other problems relating to child psychology.

DR. DIETRICH C. SMITH, Secretary of the Maryland Society for Medical Research, has recently published an account of the Society's small animal classroom project in "The American Biology Teacher." This small animal classroom project has continued to inspire nationwide interest. Reprints of great use to biology teachers and those interested in experimental medicine may be obtained from Dr. Smith at the Society's office in the School of Medicine.



Maurice Charles Pincoffs 1886 - 1960

THE DEATH of Dr. Maurice Charles Pincoffs on December 8, 1960, removed from the Maryland scene a man who, although not a native son of that state, nevertheless had spent nearly all of his adult life within its borders and had made many significant contributions to the welfare of its citizens.

Maurice Pincoffs, known to his familiars as "Pink," was born in Chicago, Illinois, on August 6, 1886. His father, for whom he was named, was a native of Rotterdam, Holland, and, as a young man, came with his parents to this country in the late 1870's. The family located in Chicago and there the son established an export business which is said to be still in existence. He married a young lady of that city, Miss Louise Henrotin,

the daughter of a Chicago physician, and they had several children, of whom Maurice was the second to be born and the first boy.

When for business reasons Maurice's father and mother were obliged to live in Belgium for several years, he went with them as a youth of 14 and attended school in Antwerp for three years. Thus he had an opportunity to become familiar with the French language which was to stand him in good stead later on.

For his college work he entered the University of Chicago and then, before obtaining his bachelor's degree, he entered Rush Medical College in 1906, where he was enrolled as a medical student from 1906 to 1909. While there, he completed the requirements for the B.S.

degree, which was awarded to him by the University of Chicago in 1909. He then spent a year enrolled as a graduate student in the University of Chicago, during which time he was associated with Professor R. R. Bensley who was head of the Department of Anatomy of that institution. While working in Bensley's department he decided to apply for admission to The Johns Hopkins University School of Medicine. Correspondence in the Hopkins files indicates that he was seriously considering a career in scientific medicine at that time. Professor Bensley evidently had a high opinion of him for he wrote a very enthusiastic letter to Professor Franklin P. Mall of Hopkins, strongly recommending that Pincoffs be admitted to Hopkins with advanced standing. His application was accepted and in October 1910 he entered the Baltimore institution as a third year medical student.

His new classmates at the Hopkins welcomed him cordially and they soon recognized him for what he was, namely, a promising student who was likely to go far in his profession. He quickly adapted himself to the new environment and graduated in June 1912 with the degree of Doctor of Medicine. Because his grades at Rush Medical College could not be counted toward qualifying for an internship in The Johns Hopkins Hospital, he was not eligible to apply for such a position even if he had desired it. Accordingly, he applied for and obtained an internship in the Presbyterian Hospital in Chicago, a post which he held during the year 1912-13. He then returned to Baltimore as assistant resident physician at the City Hospitals at Bay View.

Three years prior to Pincoffs' return to Baltimore the institution known to

Baltimoreans as "Bay View" had undergone a thorough reorganization, occasioned largely by the completion of a new building designed to care for patients with acute illnesses. Previous to the completion of that building there had been at Bay View, in addition to the main building or "Infirmmary," which housed the chronic patients, a building for the care of the tuberculous and another for the care of the insane, but there was no special building for the care of acutely ill medical or surgical patients. With the completion of the new building, which was called Ward A, a medical service was established under the charge of Dr. Thomas R. Boggs of the Hopkins Medical Faculty, and a surgical service under that of Dr. Arthur M. Shipley of the University of Maryland Medical Faculty. Both of these men were comparatively young and extremely able clinicians, and their coming to the City Hospitals in 1910 resulted in a marked improvement in the standards of medical care rendered at that institution. Moreover, the use of the new wards for the instruction of medical students unquestionably enhanced the attractiveness of the medical and surgical services as a place in which to take one's residency training in those special fields. This, then, was the environment in which the young Pincoffs served for two years as a medical resident (assistant resident physician in 1913 and resident physician in 1914), and there can be no doubt that he profited greatly by it. He left it in 1915 to become associated in private practice in Baltimore with Dr. Lewellys F. Barker who, during the previous year, had resigned the position of Professor of Medicine in The Johns Hopkins University and Physician-in-Chief to The Johns

Hopkins Hospital when those posts were placed upon a full-time basis.

Although, in assuming this connection with Dr. Barker, Pincoffs was deliberately entering the practice of medicine from which, presumably, he was expecting to make his living, he did not altogether turn his back upon scientific medicine. Instead, he devoted his mornings to working with Dr. John J. Abel in the Department of Pharmacology of the Hopkins School of Medicine, seeking to isolate the hormone *secretin* from the intestinal canal of dogs. This effort, however, was brought to an abrupt end in the spring of 1917 when the United States entered World War I, for Pincoffs, who held a commission as First Lieutenant in the Medical Reserve Corps of the United States Army, was soon called to active duty. He was promptly ordered to France as one of a large group of American medical officers who, at the request of the British Government, were assigned to duty with the British Expeditionary Force in France.

Arrived in France, Pincoffs was posted to a British battalion operating in the British sector of the Allied Line. There, as a battalion medical officer, he had an opportunity to gain valuable experience in the evacuation of the wounded from the battle area, experience which stood him in good stead later on when he was transferred to the Second Division of the American Expeditionary Force.

For his service in World War I he was awarded the Distinguished Service Cross by the United States and the Croix de Guerre with palm and two stars by the French Government. He was also highly praised by the Surgeon of the

Second Division, Major Richard Derby, in his book entitled "Wade In, Sanitary!"¹

When the war was over Pincoffs, by now a Captain, returned to Baltimore and on March 1, 1919, married his fiancée, Miss Katharine B. Randall, one of the daughters of Mr. and Mrs. Blanchard Randall of that city. He rejoined the Hopkins staff with the title of Instructor in Clinical Medicine, which meant that he served on a "part-time" as opposed to a "full-time" basis, was given the responsibility of overseeing some of the work in the medical division of the Johns Hopkins Dispensary, and resumed his connection with Dr. Barker. Everything indicated that he would remain as a part-time member of the Hopkins Medical Staff indefinitely, and work up the Hopkins "ladder," so to speak, depending upon the practice of medicine for his livelihood. This was not to be the case, however, for in 1921 he was offered the post of Professor of Medicine in the University of Maryland, which he accepted. He resigned his Hopkins posts and from that time on threw himself whole-heartedly into the carrying out of the numerous duties which his new position as head of a large clinical department entailed.

Pincoffs was just 35 years of age when he took charge of the Department of Medicine of the University of Maryland. That institution had already absorbed the Baltimore Medical College and the College of Physicians and Surgeons, and had as members of its faculty a group of older men who had held important posts in the institutions which had been absorbed. It is conceivable that the organization of a harmonious department of medicine under such conditions might have been attended with the greatest diffi-

¹ "Wade In, Sanitary! The Story of a Division Surgeon in France," by Richard Derby. New York and London, G. P. Putnam's Sons, 1919.

culty, but as far as the writer is aware the organization of Maryland's department of medicine under its new leader proceeded with smoothness and dispatch, so that it was not long before Pincoffs had a first class department of which he had every reason to be proud. The writer has always thought that the authorities of the School of Medicine of the University of Maryland showed excellent judgment in their choice of Pincoffs for the headship of their department of medicine in 1921, and a commendable broad-mindedness in being willing to go outside their own faculty in making that choice.

It would be easy to assume that the demands upon Pincoffs as the head of an active department of medicine in an expanding medical school, together with a consulting practice, would have been sufficient to occupy all of his working hours, and that he would have little time left over to devote to community matters, but such was not the case in this instance. He took an active part in the affairs of the state medical society, the Medical and Chirurgical Faculty of Maryland, served as a member of its Council from 1935 to 1944 and from 1947 to 1950, and was its president in 1953.

In 1940 he was appointed by Governor Herbert R. O'Connor as a member of the State Board of Health, taking the position which had been held by Dr. Joseph I. France, and he served continuously on that body until 1959, a matter of almost 20 years. Through this position he gained an intimate knowledge of the needs of the State of Maryland from the standpoint of both the prevention and the treatment of illness, as well as the resources at its command for dealing with those needs. It was natural, therefore, that he should play a leading role in securing the establishment of a Commit-

tee on Medical Care as a division of the Maryland State Planning Commission and, when that committee came into being, that he should serve as its first chairman at the initial meeting on January 23, 1940. In that capacity he was chiefly responsible for the development of Maryland's present program for supplying medical care to the indigent and the medically indigent, a program which has placed the State of Maryland in the very front rank among the other states of the Union. It is his services such as these which justly earned for him the designation "medical statesman."

Pincoffs' services to his profession were by no means limited to the State of Maryland, however, nor to the school with which he was associated for most of his active professional life. He was a member of three premier national associations in the field of internal medicine to which admission is by election only. These are the Association of American Physicians, the American College of Physicians, and the American Clinical and Climatological Association. He was president of the last two and served for many years as Editor of the *Annals of Internal Medicine*, the organ of the College. Under his able leadership that journal attained to the front rank of periodicals in the United States devoted to internal medicine.

When the United States was precipitated into World War II by the attack on Pearl Harbor, Pincoffs was no longer a young man. He had passed his 55th birthday and was holding a responsible position in an activity which was regarded by the United States Government as essential. Moreover he was happily married and had family responsibilities. If any one at the time supposed that these factors would keep Pincoffs out of

the second World War, they were certainly ignorant of the man. In no time at all he was organizing a hospital unit to represent the University of Maryland School of Medicine in the United States Army. When, in accordance with the desires of the Army authorities, that unit was subsequently split into two units, Pincoffs as commanding officer of one, the 42nd General Hospital, led it to Australia, landing there in 1942. Like the proverbial old war horse who suddenly hears the bugle sound its call again, he could not resist that call but trotted off to the front once more, after a generation spent in peaceful pursuits.

This time, however, it was a different front from that of 1917, and Pincoffs was called upon to render a different type of service from that which he had rendered as a battalion medical officer in France in World War I. As commanding officer of a hospital, he was obliged to perform duties of an administrative nature and later, when he was detached from his hospital and made chief of preventive medicine for the Southwest Pacific Theatre, the administrative character of his work was accentuated. It did not become so engrossing, however, as to keep him from carrying out in the field a scientific experiment designed to throw light on the relative merits of different methods in the treatment of malaria.

When the American forces entered Manila after the Japanese had been driven out, Pincoffs took the lead in establishing a system for the prevention of disease in that city, restored the health department, and brought about a general clean-up of the area. For his services in World War II he was awarded the Legion of Merit with oak leaf cluster.

In 1954 Pincoffs turned his attention to the field of preventive medicine and

rehabilitation while still on Maryland's medical faculty. He organized a Department of Preventive Medicine and remained as its head until 1957, when he retired altogether from teaching. He still continued to see private patients, however, at the University Hospital.

In the latter part of November, 1960, he was stricken with symptoms which he himself diagnosed as being due to an aneurysm of the abdominal aorta, entered the University Hospital, was successfully operated upon as far as controlling the aneurysm was concerned, but died as the result of complications on December 8, 1960. His wife and three children, Mr. Maurice C. Pincoffs, Jr., an attorney, Mrs. J. Royall Tippet, Jr., and Mr. Peter H. Pincoffs, an engineer, survive him.

At the time of his death Maurice Pincoffs was the leading member of the Medical Faculty of the University of Maryland and the leading physician in the State of Maryland. Tall and of dignified bearing, he was a striking figure in any gathering of his colleagues. He was reserved in manner and deliberate in his speech, and gave the impression of considering a problem very carefully before making up his mind or delivering an opinion, but once his mind was made up he could stand like a rock and not be diverted by anyone from the position he had taken. As one of his colleagues once said of him, his integrity was "monumental."

He had a fund of delightful personal anecdotes and a penetrating sense of humor which were a source of pleasure to his intimate friends, but one would scarcely call him a gay person, and he was certainly not a back-slapping individual.

Fond of the outdoors, he was a skilled camper, but his greatest interest in the way of sport was in sailing, of which he was a past master. He made many cruises on the Chesapeake Bay with a particularly close group of friends, and it was a byword with them that once he got the tiller or the wheel in his hands nobody else was likely to have a chance at it thereafter!

With the death of Maurice Pincoffs the country lost a brave medical officer and a distinguished physician, the State of Maryland a wise and faithful servant, the School of Medicine of the University of Maryland its most distinguished fac-

ulty member. The Johns Hopkins University a loyal alumnus in whom it delighted to take great pride, the medical profession of Maryland an outstanding clinician and consultant in internal medicine, and the people of Maryland a benefactor whose vision brought to them increased opportunities for help in the alleviation of their ills. As was well said of him at a testimonial dinner held in his honor shortly before his formal retirement from active duty in 1957, "We could not salute a more worthy disciple of Aesculapius."

ALAN M. CHESNEY

v. The Department of Pharmacology

BETH WILSON

Only a good man can be a great physician
—Osler

*In the field of observation chance favors
only the mind which is prepared*
—Pasteur

*Live as to die tomorrow
Learn as to live forever*
—Isidore of Seville

APHORISMS such as these, mounted above the lecture platform of the pharmacology laboratory, remind University of Maryland medical students of the high standards they must uphold in the Department of Pharmacology.

On the laboratory wall at the right, they see portraits of Pasteur and other scientific pioneers. And as they leave the laboratory, they see beside the exit door pictures of department trainees who now carry on such traditions in other organizations—C. Jelleff Carr, Ph.D. 1937, now senior research pharmacologist of the Psycho-pharmacology Service Center of the National Institute of Mental Health; William F. Reindollar, M.S. 1935, now chief of industrial hygiene for the Maryland State Department of Health; Salah Tawab, Ph.D. 1948, now assistant professor of pharmacology at the University of Cairo School of Medicine; Fred Ellis, Ph.D. 1938, now professor of pharmacology at the University of North Carolina School of Medicine; Joseph G. Bird, M.D. Ph.D. 1949, now chief clinical pharmacologist for Sterling-Winthrop Research Institute; Wm. Edward O'Malley, Ph.D. 1955,

now chief of the chemotherapy laboratory at the Georgetown University School of Medicine; and others.

Dr. John C. Krantz, Jr., who earned his Ph.D. degree at the University of Maryland and has been professor of pharmacology and head of the department at the medical school since 1935, is primarily responsible for the worldwide reputation of the department, as well as its resounding popularity with medical students on the campus.

Under his leadership, the department was one of the first to develop a strong research program. Sparked by his own research in anesthesiology, which brought fame to the University of Maryland through the synthesis of many widely used anesthetics, including Trimar, Vinamar, and Fluoromar (the "mar" stands for Maryland), the 19-member faculty team for 1960-61 is pursuing a remarkably broad, effective research program.

But teaching takes precedence over research. As Dr. Krantz sees the department's obligation to the State of Maryland, it is first to help turn out good doctors, and second to advance the frontiers of knowledge. He and his staff are fulfilling this dual obligation with distinction.

Teaching

This year the department has the unique honor of producing new editions of two of the most widely used pharmacology textbooks in the world. *Pharmacologic Principles of Medical Practice*,

written by Drs. Krantz and Carr and published by The Williams & Wilkins Co., goes into its fifth edition. This classic textbook for medical students has been translated into Spanish and Portuguese and is being used in medical centers not only in most English-speaking countries but in Finland, Japan, and South America.

Mrs. Ruth Musser, assistant professor of pharmacology, whose course of instruction to student nurses was in 1953 cited as a paragon by the Middle Atlantic Accrediting Agency of the nursing schools, put her course in the form of a textbook for nurses, with the collaboration of Dr. Bird, and now finds herself the co-author of a best-seller. The first edition of Musser-Bird's *Modern Pharmacology and Therapeutics*, published in 1958, was astonishingly popular, and Macmillan, the publisher, expects sales of the new edition to grow even faster.

An educational film, "Drug Addiction—A Medical Hazard," which Dr. Krantz produced with the aid of a \$20,000 grant from the U. S. Public Health Service, is being used all over the United States in health science schools and associations, and is playing a major role in reducing this hazard to the medical profession.

The pharmacological education of Maryland medical students goes far beyond their didactic instruction in *materia medica*, pharmacy, prescription writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The aim of the department is to prepare students as future physicians to use drugs intelligently in the treatment of disease. Laboratory exercises parallel the course of lectures, weekly conference periods and discussions are held with faculty and adjunct faculty members, and interde-

partmental lectures are given with the clinical departments of medicine, anesthesiology, and obstetrics.

Every Thursday and Friday afternoon three or four students are invited to have tea and discuss pharmacological problems with faculty members, the adjunct faculty representing the Maryland Academy of General Practice, a resident from the department of medicine, and a representative of the National Institutes of Health. Such informal tutoring gives the students a valuable opportunity to gain insight into the subjects they study.

Because pharmacology now affects every phase of physiological organization from cells to society, guest lecturers are invited to speak to students about some of these broader aspects of the subject. About 15 such lectures are given throughout the year by such experts as the Honorable Harry J. Anslinger, Federal Commissioner of Narcotics, Dr. Isadore Tuerk, an authority on alcoholism, and Dr. Henry Freimuth, Chief State Toxicologist.

Each senior student must prepare a thesis on some pharmacologic subject and present it to the regular and adjunct faculty. Theses must be not only scientifically correct but well written. Dr. Krantz, who is a popular lecturer himself, has written a book on *The Art of Eloquence*. A motto on the wall of the department library reminds students of the need to express themselves clearly:

*The English language is the
most important instrument at
your disposal. Learn to use it
with precision.*

The student who makes the best presentation wins the annual Paul Ehrlich Award, which carries with it a \$100 prize. One such prize-winning disserta-

tion was chosen for publication in a medical journal a few years ago.

Many graduate students at the medical school choose pharmacology as their field and the department has always been among the leaders in the number of doctoral degrees awarded throughout the years. Five graduate students, Alan Beech, Monique C. Braude, Helmut F. Cascorbi, M.D., Gilbert Duritz, and Frieda Rudo and Kadham Salman, are now working in the department, and a recent five-year research grant of \$82,356 will make possible the acceptance of more predoctoral and postdoctoral trainees.

Two graduate courses, in chemotherapy and chemical pharmacology, are taught alternate years by Dr. Raymond M. Burgison. The other is given by Dr. Edward B. Truitt, Jr. in pharmacologic methodology.

Research

Research in the department is conducted with the aid of about \$61,000 a year from the National Institutes of Health and industry. One gauge of the extent of this research is that about 200 scientific papers have been published by department members in the past 25 years.

Fluorinated ethers and other fluorinated compounds synthesized in the department have proved highly successful. The addition of fluorine lowers surface tension so that drugs penetrate cells more easily. It also makes compounds pharmacologically more potent but chemically more inert, so that explosion hazard and toxicity are reduced. Fluoromar, the first of the fluorinated ethers synthesized in the department, was the first fluorinated anesthetic used in man (1953). Hexafluorodiethyl ether (Indoklon), developed in 1957, was found to produce convulsions in animals and has proved use-

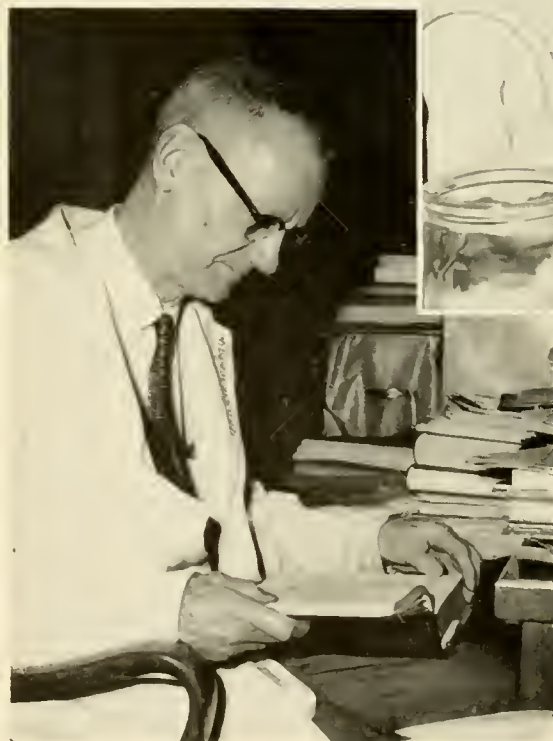
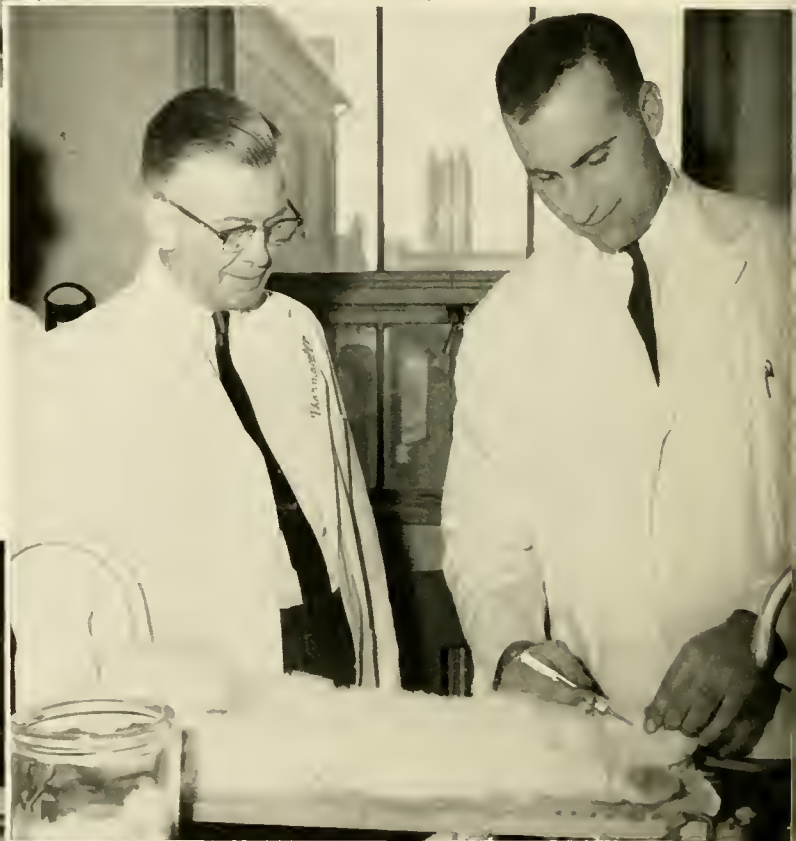
ful as a substitute for electroshock treatment in psychiatry and also in diagnosing subclinical epilepsy.

Benzophylline, a theophylline derivative, is also being investigated as a substitute for electroshock therapy.

During the past year a completely novel method of administering volatile anesthetics intravenously in emulsified form was developed and is now undergoing clinical trial. Besides the obvious advantage of eliminating the necessity for using a face mask, intravenous administration induces rapid anesthesia, requires a smaller amount of the drug, and produces little or no excitation. The blood pressure is affected only slightly and recovery is rapid, with very few side effects.

In cardiovascular research, Drs. Krantz and Burgison are investigating the mechanism of action of glyceryl trinitrate. Octyl nitrite, Isordil, and Theoglycinat were developed for coronary insufficiency and a new derivative of glyceryl trinitrate prepared last year is now undergoing clinical evaluation. Dr. Burgison and Dr. Gordon Lu are also looking for a drug that acts quickly to relieve anginal pain (like nitroglycerin) but that works over a longer period of time and that may serve to prevent attacks.

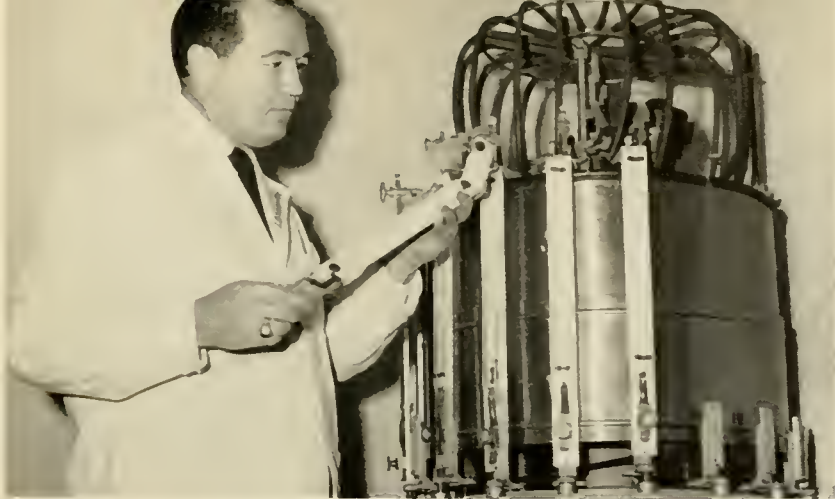
For the past three years Dr. Burgison has been synthesizing compounds with possible anticancer activity. Thus far he has submitted 468 compounds with a great variety of structures to the National Cancer Institute for testing and a few have shown interesting activity in mice. With the assistance of a chemist, J. Alan Beech, Dr. Burgison is attempting to correlate structure with activity with a view ultimately to modifying activity through structural changes. This



Above, Dr. John C. Krantz, Jr. stops to give a student advice.

Upper left, Dr. Edward B. Truitt, Jr., Miss Ann Morgan, and Mr. Fred Peyton measure gastric pH in a dog.

Lower left, Dr. Frederick K. Bell, who pioneered chemical spectroscopy in the U. S., is a physical chemist in the department of pharmacology.

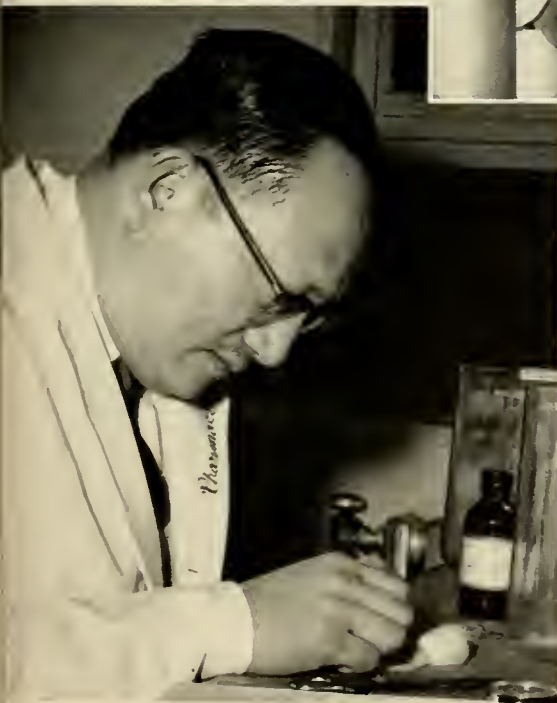


Lower right, Dr. Raymond M. Burgison demonstrates laboratory techniques.

Below, Dr. Gordon Go Lu tests drugs that may be useful in cardiovascular disease.

Right, Mrs. Ruth Mosser, co-author of a best-selling textbook for nurses, has also helped educate many hundreds of medical students.

Above, Dr. John J. O'Neill measures oxygen consumption with the aid of a Warburg apparatus.



work is supported by a three-year grant of \$29,700 from the U. S. Public Health Service.

Dr. Truitt is studying compounds that might be useful in alcoholism. Having noted that the oral antidiabetic drugs (Orinase, Diabinese) produce results in animals somewhat like those of the anti-alcohol drug disulfiram but are much less toxic, he is studying the mechanism of this antialcohol reaction and especially the role of acetaldehyde in the reaction. The U. S. Public Health Service is supporting the study with a three-year grant of \$30,000. Mr. Gilbert Duritz is assisting in this work.

With the aid of another grant of \$17,595 from the U. S. Public Health Service, Drs. Truitt and Krantz are exploring the compatibility of the tranquilizing drugs with convulsive therapy. In pursuing this line of investigation they have also become interested in the possible role of serotonin in the changes of convulsive threshold produced by tranquilizers such as reserpine and stimulants such as Marsilid. Miss Ethel Ebersberger is assisting in this work.

Dr. Truitt is also investigating the gastric factors involved in the absorption of salicylate drugs, which he finds are absorbed directly through the stomach wall. With the assistance of Miss Ann Morgan, he has shown that absorption is related to the pH of the stomach. The work is supported by a grant from Bristol-Myers.

Salicylates have been studied in the department for many years, and the specific antacid used with salicylates in Bufferin, known as dialminate, was developed in 1947 by Dr. Krantz for use in peptic ulcer.

Another study by Drs. Krantz and Truitt, to be reported soon in the *Journal*

of *Neuropsychiatry*, showed that myristicin produces most of the psychopharmacologic effect of nutmeg, which produces intoxication and habituation in man. Mrs. Monique Braude assisted in this study.

Dr. Frederick K. Bell, a physical chemist who has been with Dr. Krantz since 1939, does much of the basic research in measurements that are performed to test drugs developed in the department. Having assisted Dr. John J. Abel at Hopkins in his pioneering work in chemical spectroscopy (the active principle of insulin was isolated in their laboratory in 1927), he now applies these skills to identifying drugs in blood, urine, and tissue extracts of experimental animals.

Dr. John J. O'Neill, a biochemical pharmacologist who joined the department in November 1960, plans to study the biochemistry of the central nervous system as influenced by various drugs—convulsants, depressants, analgesics, ataractics, and hallucinogens. His main interest is in the bioenergetics of nerve impulse conduction and transmission. He will teach the biochemical aspects of pharmacology.

Biographical Notes

JOHN C. KRANTZ, JR., PH.D., *Professor and Head of Department*

Dr. Krantz, a native of Baltimore, earned B.S., M.S., and Ph.D. degrees at the University of Maryland and was awarded honorary Sc.D. and Ph.M. degrees.

He first joined the University of Maryland faculty in 1921, as professor of pharmacology and chemistry in the Schools of Pharmacy and Dentistry. Six years later he was appointed director of research in pharmaceutical chemistry for Sharp and Dohme, where he remained until 1930, when he was named chief of the Bureau of Chemistry for the Maryland State Department of Health.

MEDICAL SCHOOL SECTION

In 1935 he was appointed to his present position as professor and head of the department at the University of Maryland School of Medicine, where he has won fame for his research in anesthesia, cardiovascular drugs, and drugs used in mental disorders.

Dr. Krantz has been a member of the revision committee of the U. S. Pharmacopoeia for 31 years and served as committee secretary from 1940 to 1950.

He is past vice-president of the American College of Cardiology and of the Pharmacological Society. Among other organizations with which he is affiliated are the American Pharmaceutical Association, the American Chemical Society, the Society for Experimental Biology and Medicine, the New York Academy of Science, and the Society for Cancer Research.

He was appointed to membership in the National Research Council in 1959.

Dr. Krantz is the author of many research papers and three books: *Pharmacological Principles of Medical Practice*, *The Art of Eloquence*, and the novel *If Sugar Burns*.

Among his many awards are the Simon Medal and the Ebert Prize in Chemistry. He was honored by the International Anesthesia Research Society at its 34th congress in 1960 when a scroll, presented to him by the society's board of trustees, cited him for "meritorious achievement in research, teaching, and scholarship." He is listed in *Who's Who*.

EDWARD B. TRUITT, JR., PH.D., *Associate Professor of Pharmacology*

Dr. Truitt is a native of Norfolk, Va., and a graduate of the School of Pharmacy of the Medical College of Virginia, where he won the Kappa Psi Medal. He received his Ph.D. degree in pharmacology from the University of Maryland, having held fellowships from the Markle Foundation and the American Foundation for Pharmaceutical Education.

He saw active service in the U. S. Navy during World War II.

From 1950 to 1955 he served on the faculty of Bowman Gray School of Medicine of Wake Forest College, first as instructor and later as assistant professor in the department of physiology and pharmacology. During this period he was also A. H. Robins Fellow.

Dr. Truitt was appointed to his present position, as associate professor of pharmacology, in 1955.

He is the author of more than 30 publications relating to central nervous system stimulants and depressants and other drugs. He developed the skeletal muscle relaxant drug Rubaxin (methocarbamol) and suggested its therapeutic combination with aspirin (Rorobaxal).

RAYMOND M. BURGISON, PH.D., *Associate Professor of Pharmacology*

Dr. Burgison is a native of Baltimore and an alumnus of Loyola College. He received M.S. and Ph.D. degrees from the University of Maryland.

After seven years' work as a chemist with Continental Oil Company, Petroleum Chemicals, Inc., and U. S. Industrial Chemicals, he joined the faculty of the University of Maryland School of Medicine as associate professor of pharmacology in 1950.

His research has been in the field of cardiovascular drugs, antimetabolites, and alkylating agents in cancer chemotherapy.

Dr. Burgison is a member of the executive committee of the Medical Chemistry Section of the American Chemical Society; he was chairman of the society's Maryland section in 1957-58 and is now chairman of the section's special lecture committee. He is vice-president of the University of Maryland chapter of the Society of Sigma Xi and past president of the university's Biological Society. He is chairman of the Library Committee of the School of Medicine.

JOHN J. O'NEILL, PH.D., *Associate Professor of Pharmacology*

Dr. O'Neill was born in Jamaica, N. Y., and is an alumnus of St. Francis College. He earned M.S. and Ph.D. degrees at the University of Maryland in 1955.

Before returning to the university in November as associate professor of pharmacology, Dr. O'Neill spent several years in the Army Chemical Center, where he was chief of enzyme chemistry in the biochemical research division of the research directorate.

Several of Dr. O'Neill's papers on enzyme chemistry have been published in the *Journal of the American Chemical Society*, the *Journal of Organic Chemistry*, and the *Journal of Biological Chemistry*. He is also contributing to a chapter on biochemistry in an Encyclopedia of Science that is to be published in 1962 by Harper's.

MRS. RUTH MUSSER, M.S., *Assistant Professor of Pharmacology*

Mrs. Musser was born in Baltimore and is a graduate of Goucher College.

She has been a member of the pharmacology faculty since 1930, having earned her M.S. degree while teaching in the department under the late Dr. William Schultz.

Mrs. Musser has been in complete charge of the teaching program in pharmacology for the School of Nursing for 25 years, in addition to her teaching and research in the medical school.

She is the author of more than 20 scientific papers relating to research in anesthesia and carbohydrate metabolism and is the co-author, with Dr. Joseph G. Bird, of a textbook in pharmacology for student nurses, *Modern Pharmacology and Therapeutics*.

Mrs. Musser is a member of the Daughters of the American Revolution, Delta Delta Delta, and Sigma Xi. She is listed in *Who's Who of American Women*.

FREDERICK K. BELL, PH.D., *Research Assistant in Pharmacology*

Dr. Bell was born in Cincinnati and studied pharmacology at The Johns Hopkins University, where he earned A.B. and Ph.D. degrees.

After graduation he remained as research associate in chemistry and pharmacology at The Hopkins for 19 years. As assistant to the late Dr. John J. Abel he participated in isolating the active principle of insulin in 1927.

In 1939 he was employed by Dr. Krantz as research associate for the U. S. Pharmacopoeia and since 1954 has been on the staff of the University of Maryland School of Medicine as assistant in pharmacology.

His research relates to the application of physicochemical methods to biological problems. GORDON GO LU, M.D., PH.D., *Research Associate in Pharmacology*

Dr. Lu, a native of China, received his M.D. from the National Tung Chi University of Medicine in Shanghai and remained there for six years, first as assistant in pharmacology and later as instructor.

He came to the United States in 1947 and spent three years in teaching and research at Stanford University School of Medicine in San Francisco before coming to the department of pharmacology as a fellow in 1950. He remained here a year after earning his Ph.D., as a postdoctoral fellow, and then spent six years as a research pharmacologist in industry,

working for Schering Corporation, Johnson and Johnson Research Foundation, and Coty Products Corporation.

He has held his present position, as research associate in the department, since 1959.

Dr. Lu speaks German and French in addition to Chinese and English. He is a member of the American Society for Pharmacology, the Society for Experimental Biology and Medicine, the American Association for the Advancement of Science, Sigma Xi, and the New York Academy of Sciences.

He is the author of more than 20 scientific publications, many of them relating to anesthesia and cardiovascular research.

ANN M. MORGAN, B.S., *Research Assistant in Pharmacology*

Miss Morgan is a native of Philipsburg, Pa., and a graduate of Chatham College (formerly Pennsylvania College for Women) in Pittsburgh.

Before coming to the department in 1955 she spent four years as research assistant in the department of physiology and pharmacology of Bowman Gray School of Medicine of Wake Forest College.

She is a member of the American Association of University Women, the Daughters of the American Revolution, the American Chemical Society, and the Maryland Biological Association.

Miss Morgan has collaborated with Dr. Truitt in reporting departmental research in salicylates.

ETHEL MARIE EBERSBERGER, A.B., *Research Assistant in Pharmacology*

Miss Ebersberger is a native of Baltimore and an alumnus of Goucher College. She did graduate study at Presbyterian School of Christian Education.

At the University of Maryland School of Medicine she has spent a year and a half in cancer research in the department of anatomy and three and a half years in research on convulsants and anesthetics in the department of pharmacology.

Adjunct Faculty

C. JELLEFF CARR, Ph.D., *Adjunct Professor of Pharmacology*

JOSEPH C. BLUM, M.D., *Representative of the Academy of General Practice*.

AARON C. SOLLOD, M.D., *Representative of the Academy of General Practice*.

LEONARD MORSE, M.D., *Resident in Medicine*.

HISTORICAL REVIEW

The BULLETIN is now in its 46th year. For medical school bulletins this is a ripe old age, particularly since the journal has appeared without interruption. Despite its many vicissitudes and its changing format, the BULLETIN seems to have progressed because of itself or with the School of Medicine, we know not.

At a recent meeting of the Editorial Board, it was agreed that as the BULLETIN and the School of Medicine progress, that systematically we reflect on the past, and advise our readers of the many discoveries and happenings during the decades reported in copies of the BULLETIN now residing bound on library shelves. This task has been assumed by the members of the Editorial Board who will individually contribute subsequent sections.

As the BULLETIN matures, it is expected that the "Historical Review" will enlarge in proportion to the quality of history which has been made by members of the faculty. That which is current, therefore, becomes the living past and the plans and achievements of today will reflect their luster on the future years when those now unborn return to the files of the 1960's to re-create that which is reported below and that which will follow in subsequent issues. EDITORIAL NOTE

It Happened Twenty-Five Years Ago in the *Bulletin*

GEORGE ENTWISLE, M.D.

THE APRIL 1936 issue of the BULLETIN included two original publications, one by Dr. Clewell Howell of the Department of Pediatrics entitled "The Vitamin Requirements of the Average Child." This was a fine review paper.

Dr. John C. Dunbar, of the Department of Pathology, presented a case report of periarteritis nodosa including a review of the literature. One case of periarteritis nodosa had been found in a group of 2,000 consecutive autopsies at the University Hospital.

Additional items included the announcement of two postgraduate seminars, one sponsored by the Department of Pediatrics and another by the Department of Cardiology. The pediatric program covered a three week period beginning in June.

As was customary, the BULLETIN published the proceedings of the University of Maryland Biological Society, and included the program meetings of the 69th through the 73rd meetings. An additional note indicated that a famous scientist had visited the School of Medicine. Dr. Bernardo A. Houssay, Professor de Fisiología de la Facultad de Medicina de la Universidad de Buenos Aires, visited the various pre-clinical departments of the School and was entertained by various members of the Faculty.

Alumni Notes included items about various graduates and announced the resignation of Dr. Reid Hunt of the P & S Class of 1896 as Professor of Pharmacology at the Harvard Medical School, to become effective September, 1936. At that time Dr. Hunt was to become Emeritus Professor.

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The first 3-day course in Basic Electrocardiography was given from January 19 to 21, 1961. The facilities of the new Baltimore Union were used and proved excellent. The course was given under the direction of Dr. Leonard Scherlis, Associate Professor of Medicine and Head of the Division of Cardiology. The Faculty of the course consisted of Dr. Henry J. L. Marriott, Dr. Sidney Scherlis, Dr. Robert T. Singleton, Dr. Kyle Y. Swisher, and Dr. Theodore E. Woodward. The following physicians participated in the course:

DR. SANTI AMOROSO
Baltimore, Md.

DR. WALTER A. ANDERSON
Baltimore, Md.

DR. MELVIN BORDEN
Baltimore, Md.

DR. CARL F. BENZ
Baltimore, Md.

DR. JOHN T. CHISSELL
Baltimore, Md.

DR. THEODORE G. DE QUEVEDO
Cockeysville, Md.

DR. LUDWIG J. EGLSEDER
Easton, Md.

DR. ROBERT W. FARR
Chestertown, Md.

DR. SIGNEY R. GEHLERT
Baltimore, Md.

DR. JULIUS C. GLUCK
Baltimore, Md.

DR. LOUIS G. GRAFF
Hagerstown, Md.

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Bel Air, Maryland

DR. JOHN C. HYLE
Baltimore, Md.

DR. M. W. JACOBSON
Baltimore, Md.

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Oakland, Md.

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W. Hyattsville, Md.

DR. IRWIN H. MOSS
Baltimore, Md.

DR. R. DEWITT PECK
Montgomery, West Virginia

DR. IDOLO PIERANDREI
Laurel, Maryland

DR. NATHAN RACUSIN
Baltimore, Md.

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DR. WILLIAM L. STEWART
Westminster, Md.

DR. CHARLES H. WILLIAMS
Pikesville, Md.

If we may judge from the comments of the physicians who attended or by their response to the questionnaire we circularized, this first course was very much enjoyed by all.

Advances in Medical Science Course. Fifty-two physicians are enrolled in this course which meets every Wednesday afternoon for two hours through May 24.

Clinical Anatomy Course. Thirteen physicians are enrolled in this course which meets every Monday and Wednesday for three hours through May.



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Proceedings

January 17, 1961. Dinner Meeting. A buffet dinner was served at 6:00 P.M. in the Bressler Library. Following the dinner a paper entitled "Microscopic Anatomy of the Glomus Pulmonale" was presented by Dr. Vernon E. Krah1, Professor of Anatomy of the School of Medicine, University of Maryland. The abstract of Dr. Krah1's paper follows.

ABSTRACT

Microscopic Anatomy of the Glomus Pulmonale. Dr. Vernon E. Krah1, *Department of Anatomy, School of Medicine, University of Maryland.*

Several of the arteries which are derived from the primitive branchial arches bear a non-chromaffin paraganglion or glomus. These glomera may represent diminutive vestiges of gills. Each glomus is richly vascular, is innervated by the nerve which is phylogenetically associated with its particular arch of origin plus sympathetic nerve fibers, and contains groups of characteristic epithelioid glomus or "chief" cells. The Glomus jugulare, found in the vicinity of the tympanic cavity, is probably a derivative of the second arch. The Glomus caroticum (third arch) and Glomus aorticum (fourth arch) are innervated by the glossopharyngeal and vagus nerves, respectively, and

have been shown to serve as chemoreceptors in reflex mechanisms for the control of respiration and circulation. In view of the regularity with which glomera appear upon these persistent branchial arch derivatives it seemed reasonable to suppose that a glomus might be present upon the sixth or pulmonary arch, as well.

A dissection of fine mediastinal branches of the vagus nerve (the nerve of the sixth arch) on either side revealed twigs which converged upon the dorsal aspect of the pulmonary trunk near its point of bifurcation. Here, they terminated in the adventitia of the vessel in a small neurovascular organ. In the latter, the vascular elements and groups of epithelioid and other cells correspond in every way to those found in the other, well known glomera. This pulmonary body has been identified thus far in the cat, dog, cow, several types of monkeys and in man. The term proposed for it is the Glomus pulmonale.

While histologic similarity to known chemoreceptors, alone, does not justify the assumption of such a function for the Glomus pulmonale, its structure and intimate relationship to the pulmonary trunk suggest the intriguing possibility that the Glomus pulmonale, also, may be a chemosensitive structure involved, perhaps, in reflex adjustments of pulmonary perfusion, ventilation, or both. Physiologic studies designed to elucidate the functional significance of the Glomus pulmonale are in progress.



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ALUMNI ASSOCIATION SECTION



President's Letter

Dear Fellow Alumni:

This will be my last letter to you as president of your organization. I would like to take this opportunity to thank all of those who have supported the work of the organization by paying the increased dues, and your writing to us bits of information and your requests.

At one of the meetings of the Board of Directors, the new members asked what was the purpose of the Association. This question caused much thought on the subject. We realize that the stated purpose in the constitution no longer conforms to the realities. During the past 50 years, especially in the last 25, there have been very marked changes in our national thinking. These changes have affected all organizations, including yours. It is necessary for us to catch the underlying spirit behind this. Once this is accomplished we can continue to guide our younger graduates in those ideals and principles so necessary in the practice of the art of medicine.

Let us hear from you concerning this or, better still, come prepared to present them at the annual meeting on June 8.

Again let me thank all those who have helped to make my year easier, especially our secretary, Miss Bossert; and our executive director, Dr. Bill Triplett.

Faithfully,

ARTHUR G. SIWINSKI, M.D.

President

Alumni Association Plans Reunion at New York A.M.A. Meeting

ON THE occasion of the annual meeting of the American Medical Association to be held this June in New York, the Medical Alumni Association will hold a luncheon.

This reunion will be held at Noon on Tuesday, June 27, 1961.

Alumni registering at the A.M.A. meeting should seek the University of Maryland desk, which will be located among the many university registration desks, at which time reservations for the luncheon may be made.

Each alumnus will receive from the Alumni Association a detailed program of this luncheon.

Alumni Day 1961

PLANS are progressing rapidly for the festivities of June Week at the School of Medicine. Alumni should shortly receive detailed announcements of the program and other activities by way of a direct letter from the Medical Alumni Association.

This year a number of classes have been designated as "Reunion Classes." In anticipation of a large attendance, the BULLETIN publishes a directory of these Alumni with the hope that the information and particularly the addresses will be of mutual interest to the members of the several classes and that such information will materially aid in a successful reunion program.

Emergency Notice

THE STUDENT LOAN FUND of the Medical Alumni Association has been depleted.

Recommendations from the Faculty Committee on Scholarships and Loans

has prompted every loan and has now consumed the funds available.

There is an urgent need for additional funds with which to keep the program active and operative. There are many deserving students who must receive financial assistance if they are to complete their medical education.

It is to be remembered that funds contributed to the Alumni Association Student Loan Fund are naturally tax deductible and aside from the great assistance these funds render to the student, the money is ultimately returned and may be again used for its worthy purpose.

Contributions should be sent directly to Dr. William H. Triplett, Executive Secretary, Medical Alumni Association, School of Medicine, University of Maryland, Baltimore 1, Maryland.

Maryland Society for Medical Research Program Attracts Nationwide Attention

A GROWING national interest in the local program of the Maryland Society is evident from a steady increase in requests for literature on animal experimentation, medical careers, and for loan of the Society's films. The Maryland Society has prepared a packet of information, available upon request, this information being of great use for those who seek guidance in careers in medical research or who wish specific directions for classroom experiments or how to raise small animals.

The Society notes with satisfaction a growing interest in this phase of its work. Active memberships in the Maryland Society are solicited and contributions to this most important scientific function are gratefully received.

Dues or contributions should be sent

to Dr. Dietrich C. Smith at the School of Medicine.

Invitation or Dare

PHILIP ADALMAN of the Class of 1931 appropriately writes: "The pages of Class Notes seem to contain as much news of deaths as of news of live classmates. I believe it would be less shocking to the coronaries (of the reader) if you would have a separate listing of the obituaries, so that one doesn't subconsciously see a name and think of the person as already deceased."

Nothing would please the Editorial Staff more than to publish an issue of the BULLETIN completely devoid of deaths. Physicians' deaths are reported in public journals and from these sources, one obtains this "unhappy information." Alumni are urged to send information on their personal professional achievements or in the interest of a fellow classmate or alumnus.

Attention is again called to the Alumni News Report published with each issue. EDITOR'S NOTE

Southern Medical Association Notes

DR. F. A. HOLDEN of Baltimore writes the following interesting letter from which we are happy to quote in part.

"Whenever the Southern Medical Association has a convention, the University of Maryland has an alumni dinner and get-together. This year it was held in St. Louis on November 1, 1960. We had 17 alumni and one regular guest. Dr. R. A. Moses who is an Ophthalmology Interne in St. Louis was in charge. Dr. H. M. Robinson, Sr., as usual came the long way by train and gave the boys a pep talk and the boys who haven't been to Baltimore for a while were glad to see him. Dr. Stone expected to come but could not attend."

The following alumni were present,

most of them with their wives: R. C. Vail Robinson, 1940, and Harry M. Robinson, Jr., 1935, and his father, Harry M. Robinson, Sr., 1909. Also present Bryant L. Jones, 1944, Eugene S. Bereston, 1937, R. A. Moses, 1942 and H. S. Siegel, 1937. Present, also, were Stanley Schocket, 1959, William N. Cohen, 1959, Julian Goldberg, 1955, John B. Wells, 1941, C. A. Pruitt, 1941, Hugh B. McNally, 1934, J. Morris Reese, 1920, F. A. Holden, 1920, John D. Young, Jr., 1941 and Wilson A. Heefner, 1960.

Report of Board of Directors Meeting

November 15, 1960

THE MEETING was held in the Baltimore Union at 6 P.M., Dr. Arthur Siwinski presiding with eight members present.

The treasurer's report was presented and approved. A report on membership revealed a loss sustained when compared with the active roster one year ago.

Inquiry concerning tax exemption status of dues payments brought forth the assurance that all such payments were exempt.

Preparation of a membership roster was discussed. The expense involved in a complete roster prompted a delay in any such effort but it was agreed to continue with class rosters annually dealing with the 50 year class and each five years leading thereto, as has been the custom in the past two years. These rosters being consolidated will eventually produce a more or less complete roster.

A mailing piece depicting some recent campus improvements was approved for circulation with the approaching second billing for dues.

A report was heard relative to the reunion held in St. Louis during the Southern Medical Association meeting. Considerable discussion regarding future reunions was provoked. Careful planning for any such effort and close cooperation with a local chairman is recognized as indispensable.

Committee to select recipient for annual Honor Award was announced. All suggestions concerning nominations reaching the alumni office are to be immediately forwarded to the Honor Award Committee Chairman.

A summarized report from the Student Loan Committee containing directions for applying for a loan was read, and now serves as a guide for office personnel in handling applications.

Resolution was adopted which in substance authorized an alternate signature be recognized by Baltimore National Bank on checks issued against the Association checking account.

A report was read concerning tentative plans for a reunion of personnel identified with the Department of Surgery to be held in April 1961.

Announcement was made that the chairman for the Scientific Session program on June Day had reported Dr. David M. Spain of New York and Dr. J. Morris Nichalson of Boston would each appear on the program.

Respectfully submitted,

J. EMMETT QUEEN, M.D.
Secretary

REUNION CLASSES

Class of 1911

University of Maryland School of Medicine

ARCHIE EUGENE BROWN

300 S. Main St., Greenville, S. C.

WILLIAM L. BYERLY

909 Carolina Ave., Hartsville, S. C.

JAMES E. DIEHL

1627 Hanover Ave., Richmond 20, Va.

RICHARD C. DODSON

Rising Sun, Md.

LOUIS H. DOUGLASS

Mount Custis, Accomac, Va.

CHARLES L. DRIES

R.D. Bechtelsville, Eshbach, Pa.

OTTO FISHER

Harrisonburg, Va.*

ISADORE HIRSCHMAN

526 7th Ave., Huntington, West Va.

ABRAHAM HORNSTEIN

204 E. Biddle St., Baltimore 2, Md.

JOHN THOMAS HOWELL

Rainwater Bldg., Florence, S. C.*

KENNETH B. JONES

Church Creek, Md.

CHARLES H. KEESOR

2302 Chapline St., Wheeling, West Va.

CHARLES E. KERNODLE

Elon College, N. C.*

CHARLES R. LAW, JR.

Berlin, Md.

ISAAC MICHEL MACKS

3506 Liberty Heights Ave., Baltimore 15.

MANUEL EULALIO MALLEN

Address unknown

WILLIAM C. MARETT

Seneca, S. C.*

WALTER S. NIBLETT

1141 Gypsy Lane, East, Towson 4, Md.

JOHN OSTRO

5234 Dorchester Ave., Chicago 15, Ill.

THEM. JULIAN RAMIREZ

St. Mary's Hospital, Mayaguez, P. R.*

STANLEY H. RYNKIEWICZ

46 Main St., Kingston, Pa.

HARRY B. SCHAEFFER

55 Wyomissing Ave., Shillington, Pa.

* Last known address.

DALLAS C. SPEAS
2598 Reynolds Rd., Winston-Salem, N. C.
JOSEPH STOMEL
460 S. Manhattan Pl., Los Angeles 5, Calif.
EMMET O'BRIEN TAYLOR
Address unknown
JOSEPH ENLOE THOMAS
Jefferson, S. C.*
GRAFTON DENT TOWNSHEND
1141 Roscomore Rd., Los Angeles, Calif.
RALPH JAMES VREELAND
Unknown
JAVA C. WILKINS
Haw River, N. C.
RICHARD LLOYD WILLIAMS
Routzdale, Pa.

Class of 1911

Baltimore Medical College

WILLIAM F. BECKNER
713 W. Virginia Bldg., Huntington, W. Va.
LAWRENCE F. BOLAND
216 E. Main St., Frankfort, Ky.
FRANK J. BROSCART
8 Russell Ave., Gaithersburg, Md.
LAWRENCE A. CAHILL
316 Lafayette St., Newark 5, N. J.
FRED GLOVER CAMPBELL
Warren, Me.
ANTONIO ESCARRA FERNANDES
Unknown
JAMES C. FRYE
Williamsburg, Pa.
GUSTAVE A. GORISSE
Mayview, Pa.
JITSUZA HAYAISHI
Unknown
HOWARD KEMP
RFD #1, Shelburne, Mass.
JOSEPH JACOBSON
Unknown
ALFREDO LASSISE RIVERA
7 Coronel Soto St., Mayaguez, P. R.*
J. L. MONTALVO-GUENARD
Unknown
LOUIS A. PERRAS
171 Butler St., New Bedford, Mass.

JAMES EARL SPRINGER
408 Evans Savings Bank, Akron, Ohio
GEORGE L. STRAUB
4117 Anderson Rd., Coral Gables 46, Fla.
RICHARD WHITE TREVASKIS
220 Baltimore Ave., Cumberland, Md.
WILLIAM H. TRIPLETT
1038 Lakemont Rd., Baltimore 28, Md.
ERNEST L. WILSON
Unknown

Class of 1911

College of Physicians & Surgeons

GEORGE K. ALLISON
Unknown
CARL J. BAUNGARTNER
429 W. Church St., Jacksonville 2, Fla.
WILLIAM T. GOCKE
209 W. Pike St., Clarksburg, West Va.
EDWARD ST. C. HAMILTON
Oak Hill, West Va.
NATHAN S. HANELLIN
419 80th St., Brooklyn 9, N. Y.
HOWARD ENGLER HARMAN
159 E. Water St., Chillicothe, Ohio
CHARLES C. HARMER
Unknown
JOHN F. HOGAN, SR.
2 East Read St., Baltimore 2, Md.
FRANCIS HUTCHINGON
485 East Howard St., Pasadena, Calif.
FRANK LESLIE JENNINGS
Medical Arts Bldg., Baltimore 1, Md.
ROBERT ED. STACK KELLEY
157 Warren St., Waltham 54, Mass.*
JOSEPH B. KILBOURN
36 Pearl St., Hartford 3, Conn.
ORAM R. LAWRY
23 Oak St., Rockland, Me.
JOHN BENEDICT MAKIN
601 Grand Ave., Asbury Park, N. J.
ROBERT J. McDOWELL
60 Genesee St., Auburn, N. Y.*
JACOB MENDELEVITZ
111 75th Ave., Forest Hills, N. Y.*
ISIDORE MICHEL
3 East 74th St., New York 21, N.Y.
HERMAN SIMMONS MILLER
609 Washington St., Wilmington 1, Del.

* Last known address.

ALUMNI ASSOCIATION SECTION

KARL HADDON TRIPPETT
First National Bank Bldg., Grafton, W. Va.
GEORGE P. WALLER, JR.
11 E. 44th St., New York, N. Y.*
N. B. WHITCOMB
Walton, N. Y.
LOUIS V. WILLIAMS
R.D. 7, York, Pa.

Class of 1916

RICHARD T. ARNEST
Warsaw, Va.
BARTUS T. BAGGOTT
3812 Greenmount Ave., Baltimore 18, Md.
GEORGE A. BAWDEN
Medical Arts Bldg., Baltimore 1, Md.
FOSTER A. BECK
2224 Highland St., Allentown, Pa.
EDWARD H. BENSON
Route 1, Box 260, Ruxford Drive,
Kingsville, Md.
BENJAMIN H. BIDDLE
120 E. Main St., Lancaster, Ohio
EVERETT L. BISHOP
384 Peachtree St., Atlanta 3, Ga.
E. N. BOCCANEGRA LOPEZ
1 Espana Way, Panama, R. P.
THOMAS LATHAM BRAY
Plymouth, N. C.
CHARLES R. BROOKE
Vet. Adm. Hospital, East Orange, N. J.
BENJAMIN B. BRUNBAUGH
5609 Main St., Elkridge 27, Md.
HENRY F. BUETTNER
5005 Edmondson Ave., Baltimore 29, Md.
IGNATIUS F. A. BYRNE
225 Covert St., Brooklyn 7, N. Y.
HONORIO F. CARRASQUILLO
151 Capitan Berreteaga St., San Juan P. R.
MICHAEL E. CAVALLO
265 Lafayette St., New York 12, N. Y.
JAMES J. CHANDLER
219 N. Washington St., Sumter, S. C.
LUCIEN ROMEO CHAPUT
3 Washington Square, Haverhill, Mass.
LEWIS F. COLE
41 Prospect St., Wells, N. Y.
JAMES ERRIC CUPP
106½ W. Main St., Spartanburg, S. C.*

WILLIAM J. DILLON
162 Maple St., Springfield, Mass.
T. M. DOMINGUEZ RUBIO
1 Baldorioty St., Guayama, P. R.
EDWARD P. DUNNE
Unionville, Conn.
ISRAEL JACOB FEINGLOS
2002 E. Pratt St., Baltimore 31, Md.
MAURICE FELDMAN
3602 Fords Lane, Baltimore 15, Md.
WILLIAM T. FERNEYHOUGH
202½ S. Scales St., Reidsville, N. C.
WILLIAM H. FLYNN
9 N. Main St., Bristol, Conn.
FRED T. FOARD
State Dept. of Health, Raleigh, N. C.
RAYMOND K. FOXWELL
1832 K St., N.W., Washington 6, D. C.
HAROLD E. GILLET
260 Main St., Ramsey, N. J.*
HARRY GOLDMANN
2326 Eutaw Place, Baltimore 17, Md.
J. F. GONZALEZ
Campeche St. 227, Urbanizacion Baldrich,
Hato Rey, P. R.
BOWERS H. GROWT
Addison, Mich.
HUMPHREY W. GWYNN
321 N. Main St., Orlando, Fla.
ALBERT G. HAHN
1335 12th St., Hickory, N. C.
JOHN ROY HEGE
19 S. Church St., Concord, N. C.
ELLSWORTH E. LIGHT
Alton Bay, N. H.
CHARLES H. LUPTON
142 W. York St., Norfolk 10, Va.
FRANK C. MARINO
1129 St. Paul St., Baltimore 2, Md.
JACOB H. MATTHAI
101 S. Center St., Cumberland, Md.*
GEORGE MCLEAN
Medical Arts Bldg., Baltimore 1, Md.
F. J. MEJIAS
1308 Ponce de Leon Ave., Santurce, San
Juan, P. R.
LAWRENCE G. MILLER
5000 Tulip Ave., Relay, Md.
A. BOYNTON NEVLING
Mayo Clinic, Rochester, Minn.

* Last known address.

FRANK P. NICHOLSON
895 Summit Ave., Jersey City, N. J.

ROBERT H. NOELL
1320 S. Church St., Rocky Mount, N. C.

VINCENT J. ODDO
322 Broadway, Providence 9, R. I.

GONZALES O'NEILL
351 N. Arlington Ave., East Orange, N. J.

FERNANDO PENABAZ
Unknown

GUY R. POST
1116 S. Park Drive, Fairmont, W. Va.

C. A. REIFSCHNEIDER
104 W. Madison St., Baltimore 1, Md.

GEORGE RICE
126 Mediord Drive, San Antonio 9, Tex.

JULIO R. ROLENSON
1803 Ponce de Leon Ave., Santurce, San
Juan, P. R.

FRANCIS F. RUZICKA
1011 N. Charles St., Baltimore 1, Md.

ANGEL M. BANTOS-BUCH
Box 300, Santiago de Cuba, Cuba*

WILBUR F. SHIRKEY, JR.
1031 Quarrier St., Charleston, W. Va.

NOAH SHORT
Norton, Va.

HAROLD M. STEIN
227 W. Broadway, Paterson, N. J.

EDWARD FRANKLIN SYROP
Unknown

CARL M. VAN POOLE
Mt. Airy, Md.

MAURICE C. WENTZ
455 W. Market St., York, Pa.

WM. FREDERICK WILLIAMS
122 S. Center St., Cumberland, Md.

HUMPHREY D. WOLFE
Woodstown, N. J.

Class of 1921

BRUCE BARNES
Scaford, Del.

CARL FISHER BENSON
5111 York Rd., Baltimore 12, Md.

JOHN R. BERNARDO
342 High St., Bristol, R. I.

VINCENT BONFIGLIO
1903 S. Harvard St., Los Angeles, Calif.

JOGESH CHANDRA BOSE
Unknown

EARL E. BROADUP
202 Virginia Ave., Cumberland, Md.

ANDRES B. CASTRO
Unknown

OSCAR COSTA Y GULLERMO
74 S. Brau, San Juan, P. R.*

SAMUEL H. CULVER
1606 Kelly Ave., Baltimore 9, Md.

HERMAN J. DORF
7404 Liberty Rd., Baltimore 7, Md.

CHARLES F. FISHER
508 Goff Bldg., Clarksburg, W. Va.

LEON FREEDOM
1031 St. Paul St., Baltimore 2, Md.

JOHN WILLIS GUYTON
3961 Greenmount Ave., Baltimore 18, Md.

CYRIL EUGENE HAWKS
311 W. Montgomery Ave., Rockville, Md.*

ALBERT JAFFE
4107 Milford Mill Rd., Baltimore 8, Md.

GEORGE R. JOYNER
133 Chestnut St., Suffolk, Va.

DANIEL F. KEEGAN
144 Golden Hill St., Bridgeport, Conn.

LOUIS LASS
2314 Broad Ave., Altoona, Pa.

BENJAMIN LUBAN
730 High St., Newark, N. J.

OSCAR COSTA MANDRY
P. O. Box 10048, Santurce, P. R.

E. MARTINEZ-RIVERA
108 Jose De Diego St., Rio Piedras, P. R.

ARLEY VON MCCOY
2207 National Road, Wheeling, W. Va.

THOMAS R. O'ROURK
104 W. Madison St., Baltimore 1, Md.

FRANK A. PACIENZA
Medical Arts Bldg., Baltimore 1, Md.

MOSES PAULSON
11 E. Chase St., Baltimore 2, Md.

EDGAR ALLEN POE PETERS
394 Bergen Ave., Jersey City, N. J.

HAROLD C. PILLSBURY
1800 N. Charles St., Baltimore 1, Md.

RALPH J. PLYLER
611 Mockville Ave., Salisbury, N. C.

JOSEPH POKORNY
2200 E. Madison St., Baltimore 5, Md.

* Last known address.

ALUMNI ASSOCIATION SECTION

- N. ALFRED QUINONES
387 Providence St., San Juan, P. R.
- FRANK A. REYNOLDS
Athol, Mass.
- HAROLD A. ROMILLY
16701 Seneca Ave., Lakewood 7, Ohio
- FREDERICK C. SABIN
23 N. Ann St., Little Falls, N. Y.
- J. W. SCHILLING
4031 Cochran St., Erie, Pa.
- SOLOMON SHERMAN
2424 Eutaw Place, Baltimore 17, Md.
- FELIX S. SHUBERT
3926 State St., Erie, Pa.
- JOHN V. SZCZERBICKI
1802 Eastern Ave., Baltimore 31, Md.
- LOUIS M. TIMKO
11623 Buckeye Rd., Cleveland, Ohio
- HERMAN E. WANGLER
1329 Pacific Ave., Atlantic City, N. J.
- WILLIAM F. WEINKAUF
Corunna, Mich.
- GEORGE E. WELLS
4100 Edmondson Ave., Baltimore 29, Md.
- MORTIMER H. WILLIAMS
711 Medical Arts Bldg., Roanoke, Va.
- LESLIE A. YAEGER
470 Hamilton Ave., Trenton, N. J.*
- Class of 1926**
- HARRY ANKER
106 S. Main St., Akron 8, Ohio
- JOHN ASKIN
1401 Reisterstown Rd., Pikesville 8, Md.
- MARGARET B. BALLARD
St. John's Prof. Center, Ellicott City, Md.
- JACK H. BEACHLEY
221 W. Washington St., Hagerstown, Md.
- WARREN E. CALVIN
1215 4th Ave., Seattle, Wash.
- ANTONIO F. D'ANGELO
99 State St., Bristol, R. I.
- HENRY DEVINCENTIS
285 Henry St., Orange, N. J.
- H. ELIAS DIAMOND
1749 Grand Concourse, New York 53, N. Y.
- FRANK R. DIPAULA
Vet. Adm. Hospital, New Orleans 12, La.
- NEWMAN H. DYER
Capital Bldg., Charleston, West Va.
- PAUL EANET
6727 16th St., N.W., Washington 12, D. C.
- CHARLES W. EDMONDS
614 Hastings Rd., Towson 4, Md.
- JULIAN C. ELLIOTT
College St., Oxford, N. C.
- HAROLD HERMAN FREEDMAN
63 W. Main St., Freehold, N. J.
- ARTHUR N. FREUDER
365 Parkside Ave., New York 26, N. Y.
- ISADORE E. GERBER
1095 Park Ave., New York 28, N. Y.
- ABEL GORDON
616 Main Ave., Passaic, N. J.
- JOHN W. GRAHAM
3100 Fulton St., San Francisco 18, Calif.
- DAVID M. HELFOND
8127 88th St., Glendale 27, N. Y.
- NEVINS B. HENDRIX
122 S. Maple Ave., Martinsburg, West Va.
- CALVIN HYMAN
2500 Eutaw Place, Baltimore 17, Md.
- JACOB R. JENSEN
1514 E. Cold Spring Lane, Baltimore 18, Md.
- PHILIP JOHNSON
223 Monroe St., Fairmont, West Va.
- MEYER S. JOLSON
531 Scott St., Covington, Ky.
- ALPHONSE J. KNAPP
7 West 6th St., East Liverpool, Ohio
- JOHN A. KROSNOFF
Bentleyville, Pa.
- LOUIS T. LAVY
1844 W. North Ave., Baltimore 17, Md.
- HYMAN EDMUND LEVIN
3400 Hilton Rd., Baltimore 15, Md.*
- ISADORE LEVIN
216 Superior Ave., Cleveland, Ohio
- JOSEPH LEVIN
831 S. 13th St., Newark 8, N.J.
- WILLIAM F. E. LOFTIN
Marion, N. C.
- LLOYD U. LUMPKIN
918 E. Las Olas Blvd., Ft. Lauderdale, Fla.
- FRANK F. LUSBY
230 N. Potomac St., Hagerstown, Md.
- EMANUEL A. MANGINELLI
118 E. 54th St., New York 22, N. Y.
- WALTER C. MERKEL
Valley Rd., Garrison, Md.

* Last known address.

HARRY G. MILLER

2060 Anthony Ave., New York 57, N. Y.

ALBERT F. MORICONI

438 Hamilton Ave., Trenton 9, N. J.

WILLIAM C. POLSUE

308 Medical Arts Bldg., Charleston, W. Va.

ARTHUR RATTENNI

1011 Smith St., Providence 8, R. I.

ALBERT A. ROSENBERG

422 Shaw Ave., McKeesport, Pa.

MAX HARRY ROSENFELD

405 W. Bedford Ave., Los Angeles, Calif.*

ABRAHAM S. ROTHBERG

110 E. 90th St., New York, N. Y.

DAVID SASHIN

25 West 81st St., New York 24, N. Y.

PAUL SCHENKER

3213 Pinkney Rd., Baltimore 15, Md.

JACOB SCHMUCKLER

543 Hartford Ct., South Orange, N. J.

WILLIAM SCHUMAN

1701 Eutaw Place, Baltimore 17, Md.

DAVID SCHNEIDER

1101 N. Milton Ave., Baltimore 13, Md.

RALPH A. SCHWARTZ

101 Conant St., Hillside, N. J.

ARTHUR A. SCULLION

460 Anderson Ave., Cliffside Park, N. J.

ELIZABETH SHERMAN

P. O. Box 141, Front Royal, Va.

FRANK SPANO

320 47th St., Union City, N. J.

MAURICE L. TEITELBAUM

863 Eastern Parkway, Brooklyn, N. Y.

HERBERT R. TOBIAS

Berkeley Springs, West Va.

MAX TRUBEK

121 E. 60th St., New York 22, N. Y.

SAMUEL WEINSTEIN

888 Eastern Parkway, Brooklyn 13, N. Y.

LOUIS L. WEISS

202 E. 51st St., Brooklyn 3, N. Y.

LOUIS J. WESELEY

600 E. 18th St., Brooklyn 26, N. Y.

GUY LORRAINE WHICKER

Professional Bldg., Kannapolis, N. C.

SAMUEL B. WOLFE

1331 E. North Ave., Baltimore 13, Md.

Class of 1931

PHILIP ADALMAN

87-10 37th Ave., Jackson Heights 72, N. Y.

DAVID H. ANDREW

33 Dmndalk Ave., Baltimore 22, Md.

THOMAS M. ARNETT

Vet. Adm., 200 E. State St., Trenton 8, N. J.

BEATRICE BAMBERGER

Benjamin Franklin Hosp., Columbus 7, Ohio

PAUL C. BARTON

67 Union St., Worcester 8, Mass.

EUGENE I. BAUMGARTNER

Oakland, Md.

HENRY I. BERMAN

Veterans Adm. Hospital, Louisville, Ky.

WILLIAM C. BOGGS

75 12th St., Wheeling, W. Va.

ARTHUR T. BRICE

Jefferson, Md.

BERNARD BRILL

24 8th St., Brooklyn 17, N. Y.

JOHN L. BRILL

909 N. 12th St., Philadelphia 23, Pa.

ROY L. CASHWELL

Southeastern Bldg., 300 S. Main St., Greenville, S. C.

KENNETH L. CLONINGER

Catawba Hospital, Inc., Newton, N. C.

MELVIN B. DAVIS

6800 Morningson Rd., Baltimore 22, Md.

JOSEPH F. DRENGA

209 S. Chester St., Baltimore 31, Md.

J. WESLEY EDEL, JR.

4502 N. Charles St., Baltimore 18, Md.

DAVID S. EISENBERG

18 William St., Auburn, N. Y.

ROY C. ERNEST

4117 Mayfield Rd., South Euclid 21, Ohio

SAMUEL A. FELDMAN

885 Park Ave., New York 8, N. Y.

ARTHUR S. FEUER

3099 Brighton 6th St., Brooklyn, N. Y.

ISADORE K. GROSSMAN

1527 E. North Ave., Baltimore 13, Md.

DONALD B. GROVE

Medical Bldg., Cumberland, Md.

RACHEL K. GUNDRY

5002 Frederick Rd., Baltimore 29, Md.

MARVIN R. HANNUM

54 W. Main St., Milan, Mich.

* Last known address.

ALUMNI ASSOCIATION SECTION

JOSEPH W. HARRIS
118 Charmonth Dr., Syracuse 7, N. Y.

RAYMOND F. HELFRICH
1120 St. Paul St., Baltimore 2, Md.

REUBEN HOFFMAN
3602 Forest Park Ave., Baltimore 16, Md.

MARK B. HOLLANDER
Medical Arts Bldg., Baltimore 1, Md.

KENT M. HORNBOOK
New Martinsville, W. Va.

SAMUEL M. JACOBSON
50 Pershing St., Cumberland, Md.

FRANK H. JAKLITSCH
2579 N. Aster Place, Westbury, L. I., N. Y.

CARL D. F. JENSEN
1601 16th Ave., Seattle 22, Wash.

PAGE C. JETT
Prince Frederick, Md.

ARTHUR F. JONES
Oakland, Md.

ABRAHAM KARGER
2015 Grand Concourse, New York 57, N. Y.

MAX KAUFMAN
2151 75th St., Jackson Heights, L. I., N. Y.

WALTER J. KEEFE
350 Farmington Ave., Hartford, Conn.

JOHN F. KILGUS, JR.
119 Capitol Ave., Hartford 14, Conn.

WALTER KOHN
102 E. Fort Ave., Baltimore 30, Md.

JEROME L. KRIEGER
4024 6th Ave., Brooklyn 32, N. Y.

MICHAEL KROSNOFF
Scenery Hill, Pa.

HARRY LACHMAN
2322 Callow Ave., Baltimore 17, Md.

H. VERNON LANGELOTTIG
Mt. Vernon, Mo.

ALSTON G. LANHAM
Ronceverte, W. Va.

PHILIP F. LERNER
1111 St. Paul St., Baltimore 2, Md.

SIDNEY S. LESHINE
144-21 38th St., Flushing, L. I., N. Y.

DAVID R. LEVINE
488 E. 18th St., Brooklyn 26, N. Y.

THOMAS A. MARTIN
2811 Hillsboro St., Raleigh, N. C.

JOHN F. MASTERSON
98 Myrtle Ave., Irvington, N. J.

LEO M. MEYER
43 S. Lewis Place, Rockville Center, N. Y.

CLARENCE F. MORRISON
Sutton, West Va.

WALDO B. MOYERS
6901 Pineway, Hyattsville, Md.

RICHARD L. MURPHY
1741 Elm St., Manchester, N. H.

LEO S. PALITZ
31 West 10th St., New York, N. Y.

WALTER O. REHMEYER
Monahaus, Tex.

MANUEL RODRIQUEZ EMA
421 Tapia St., Santurce, P. R.

ROBERT F. ROHM
509 Liberty Ave., Pittsburgh, Pa.

BENJAMIN B. ROSENBERG
1070 E. New York Ave., Brooklyn 12, N. Y.

JOHN K. ROZUM
4100 Red Road, South Miami 43, Fla.

EMANUEL A. SCHIMUNEK
842 S. East Ave., Baltimore 24, Md.

WILLIAM M. SEABOLD
5402 Edmondson Ave., Baltimore 29, Md.

HERMAN H. SEIDMAN
760 Hunts Point Ave., New York, N. Y.

HARRY S. SHELLEY
3725 Estes Rd., Nashville 12, Tenn.

ALBERT J. SHOCHAT
4111 Liberty Heights Ave., Baltimore 7, Md.

ARTHUR G. SIWINSKI
603 Edgevale Rd., Baltimore 10, Md.

MICHAEL J. SKOVRON
439 Arlington Rd., Erie, Pa.

MARVIN L. SLATE
203 E. Green St., High Point, N. C.

ALEXANDER SLAVCOFF
3231 N. 2nd St., Harrisburg, Pa.

SOLOMON SMITH
1261 E. Belvedere Ave., Baltimore 12, Md.

SUSANNE STERLING (MRS. ROBERT ASHTON)
905 St. Georges Rd., Baltimore 10, Md.

RUSSELL A. STEVENS
148 S. Franklin St., Wilkes Barre, Pa.

ROBERT B. TAYLOR
700 Cathedral St., Baltimore 1, Md.

ALFRED W. VAN ORMER
122 S. Centre St., Cumberland, Md.

HAROLD C. WHIMS
County Health Dept., Asheboro, N. C.

HENRY WIGDERSON
41-08 74th St., Jackson Hghts., L. I. 73, N. Y.

Class of 1936

ABRAHAM BATALION
Kayford, W. Va.
REID LAFEAL BEERS
1625 Irving Ave., Glendale, Calif.
MILTON BERNSTEIN
3202 Taney Rd., Baltimore 15, Md.
E. ROLAND BIEREN
6416 Arlington Blvd., Falls Church, Va.
HARRY C. BOWIE
926 St. Paul St., Baltimore 2, Md.
JAMES H. BUNN, JR.
37 Loudon Pkwy., Loudonville, N. Y.
IRVING BURKA
3701 Conn. Ave., N.W., Washington 8, D. C.
HAROLD H. BURNS
115 E. Eager St., Baltimore 2, Md.
JEROME K. BURTON
209 Main, Boise, Ida.
JOSEPH EDGAR BUSH
Hampstead, Md.
GEORGE J. COPLIN
1032 Coolidge Rd., Elizabeth, N. J.
VLADIMIR F. CTIBOR
Califon, N. J.
LEO M. CURTIS
8218 Wisconsin Ave., Bethesda, Md.
NACHMAN DAVIDSON
6100 Park Heights Ave., Baltimore 15, Md.
GEORGE H. DAVIS
404 Hollen Rd., Baltimore 12, Md.
SEYMOUR R. DEEHL
226 W. Jersey St., Elizabeth, N. J.
STUART W. DITTMAR
473 Lincoln Way, E., Chambersburg, Pa.
DARIUS M. DIXON
5504 Normandy Place, Baltimore 10, Md.
JOSEPH DROZD
240 S. Ann St., Baltimore 31, Md.
JEROME FELDMAN
20094 Mission Blvd., Hayward, Calif.
LESTER M. FOX
480 Herkimer St., Brooklyn 15, N. Y.
PHILIP LAIR FRANKLIN
936 W. 5th Ave., Gary, Ind.

MICHAEL G. FRICH
525 Everhart Rd., Corpus Christi, Tex.
MARION H. GILLIS, JR.
206 Walnut St., Salisbury, Md.
HARRY S. GIMBEL
4605 Edmondson Ave., Baltimore 29, Md.
FRANK GLASSNER
308 Chestnut St., Roselle, N. J.*
JESSE W. GORDNER, JR.
410 Ferry St., Danville, Pa.
DAVID B. GREENGOLD
67 Commonwealth Ave., Pittsfield, Mass.
PHILIP O. GREGORY
Boothbay Harbor, Me.
WILLIAM C. GREIFINGER
31 Lincoln Park, Newark, N. J.
JAYE J. GROLLMAN
2026 R St., N.W., Washington 9, D. C.
BENJAMIN ISAACS
1261 E. Belvedere Ave., Baltimore 12, Md.
C. HENRY JONES
707 North Rebecca Ave., Scranton, Pa.
EMORY E. JONES, JR.
Mt. Hope, W. Va.
WALTER KARFGIN
1212 Southview Rd., Baltimore 12, Md.
SAUL KARPEL
190 Montauk Ave., New London, Conn.
NORMAN KLEIMAN
3803 Edmondson Ave., Baltimore 29, Md.
HOWARD T. KNOBLOCH
1102 Columbus Ave., Bay City, Mich.
LOUIS J. KOLODNER
2502 Entaw Place, Baltimore 17, Md.
RAYMOND J. LIPIN
Veterans Adm. Hospital, Little Rock, Ark.
ROBERT M. LOWMAN
789 Howard Ave., New Haven 4, Conn.
GRANT LUND
3001 Ashby Ave., Las Vegas, Nev.
ARTHUR F. MCCAULEY
302 E. 33rd St., Baltimore 18, Md.
HECTOR C. MCKNEW, JR.
20 E. Locust St., Newark, Ohio
EUGENE R. MCNINCH
154 S. Bradford St., Dover, Del.
W. KENNETH MANSFIELD
2 E. Read St., Baltimore 2, Md.
LOUIS R. MASER
4335 Park Heights Ave., Baltimore 15, Md.

* Last known address.

ALUMNI ASSOCIATION SECTION

- JAMES B. MORAN
66 Fruit Hill Ave., Providence 9, R. I.
- JAMES P. MORAN
Unknown
- BENJAMIN B. MOSES
448 N. Luzerne Ave., Baltimore 24, Md.
- JOSEPH R. MYEROVITZ
2421 Kenoak Ave., Baltimore 9, Md.
- WILLIAM MYERS
1230 Monterey St., Pittsburgh 12, Pa.
- HANSFORD D. NESTER
314 E. Grand Ave., Eau Claire, Wisc.
- THOMAS A. NESTOR
337 Main St., Wakefield, R. I.
- MORRIS J. NICHOLSON
25 Bonad Rd., West Newton, Mass.
- SIGMUND R. NOWAK
408 S. Patterson Park Ave., Baltimore 31.
- WILLIAM A. PARR
2 East Read St., Baltimore 2, Md.
- RICHARD H. PEMBROKE, JR.
209 E. Biddle St., Baltimore 2, Md.
- SALVADOR D. PENTECOST
14 Claremont Ave., Maplewood, N. J.
- CARL PIGMAN
Box #390, Whitesburg, Ky.
- SAMUEL MARVIN REICHEL
University Hospital, Baltimore 1, Md.*
- GREGORY N. ROCHLIN
200 Brattle St., Cambridge 28, Mass.
- RALPH B. ROSEMAN
4164 N. 7th St., Philadelphia 40, Pa.
- VICTOR ROSENTHAL
Merrick, N. Y.
- JAMES D. ROYSER
Benson, N. C.
- GEORGE P. SCHMIELER
615 1st St., Canonsburg, Pa.
- GEORGE D. SELBY
1028 Conn. Av., N.W., Washington 6, D. C.
- LAWRENCE J. SHIMANEK
3711 Falls Rd., Baltimore 11, Md.
- CYRIL SOLOMON
109 E. 61st St., New York 21, N. Y.
- MATTHEW SORIN
611 E. Poplar St., Stockton, Calif.
- DAVID M. SPAIN
Beth-El Hospital, Brooklyn 12, N. Y.
- MILLARD F. SQUIRES, JR.
507 S. Maryland Ave., Richardson Pk.,
Wilmington, Del.
- MILTON H. STAPEN
760 Bushwick Ave., Brooklyn 21, N. Y.
- JOSEPH L. STECHER
908 Delaney, Orlando, Fla.
- SAMUEL STEINBERG
2822 N. 5th St., Philadelphia 33, Pa.
- MORRIS H. STERN
471 Clifton Ave., Clifton, N. J.
- STUART SUNDAY
201 E. 33rd St., Baltimore 18, Md.
- ISAAC TERR
1037 Seventh St., Las Vegas, N. M.
- ANTHONY J. THOMAS
4600 York Rd., Baltimore 12, Md.
- LAWRENCE M. TIERNEY
246 Elm St., West Haven, Conn.
- BAXTER S. TROUTMAN
Dula Hospital, Lenoir, N. C.
- GEORGE L. VIEWEG, JR.
2235 Chapline St., Wheeling, West Va.
- W. KENNEDY WALLER
3500 N. Calvert St., Baltimore 18, Md.
- DANIEL G. WEHNER
Medical Arts Bldg., Baltimore 1, Md.
- JACOB J. WEINSTEIN
900 17th St., N.W., Washington, D. C.
- GIBSON J. WELLS
5618 St. Albans Way, Baltimore 12, Md.
- DANIEL WILFSON, JR.
5721 Park Heights Ave., Baltimore 15, Md.
- ARTHUR G. WILKINSON
111 Sherman Ave., New Haven 11, Conn.
- NATHAN WOLF
126 Main St., Brawley, Calif.
- CHARLES S. YAVELow
105 Stevens Ave., Mt. Vernon, N. Y.
- JOSEPH G. ZIMRING
222 Riverside Blvd., Long Beach, N. Y.

Class of 1941

- AURORA F. ALBERTI
9507 Wadsworth Drive, Bethesda, Md.
- FRED ALEXANDER
530 Walnut St., Philadelphia 6, Pa.
- JEROME C. ARNETT
Rowlesburg, W. Va.

* Last known address.

- CHARLES P. BARNETT
Mary Wash. Hosp., Fredericksburg, Va.
- JOSEPH J. BOWEN
111 W. Main St., Waterbury 2, Conn.
- JULIUS C. BROOKS
Medical Arts Bldg., Chattanooga 3, Tenn.
- WILLIAM R. BUNDICK
840 Park Ave., Baltimore 1, Md.
- JOHN M. CARTER
1023 6th Ave., Huntington 1, W. Va.
- PIERSON M. CHECKET
4024 Essex Rd., Baltimore 7, Md.
- CARLOS M. CHIQUES
Elmhurst Gen'l Hospital, Elmhurst 73, N. Y.
- CHARLES E. CLONINGER
Box 245, Conover, N. C.
- RICHARD A. CONLEN
3 S. Haddon Ave., Haddonfield, N. J.
- LEROY G. COOPER
827 S. George St., York, Pa.
- JOSEPH V. CRECCA
551 Berkeley Ave., Orange, N. J.
- GENE A. CROCE
132 Glen Ridge Rd., Cranston, R. I.
- DWIGHT P. CRICKSHANK
1911 Dudley Ave., Parkersburg, W. Va.
- JOHN McC. CULLER
15 E. 2nd St., Frederick, Md.
- MIGUEL L. DEVINCENTIS
1202 St. Paul St., Baltimore 2, Md.
- EMILIO DIEZ-GUTIERREZ
Orocovis, P. R.
- ANTHONY DIPAULA
5301 Harford Rd., Baltimore 14, Md.
- JOHN ESNARD
1245 Glendon, Los Angeles 24, Calif.
- CAMILLE MARY EVOLA
33-44 Farrington St., Flushing, L. I., N. Y.*
- EDWARD L. FREY, JR.
519 Overdale Rd., Baltimore 29, Md.
- JOSE P. GARCIA-BLANCO
St. Margaret Mem. Hosp., Pittsburgh, 1, Pa.
- JULIUS GELBER
1514 Union St., Schenectady 9, N. Y.
- WILLIAM GOODMAN
1334 Sulphur Spring Rd., Arbutus 27, Md.
- THEODORE J. GRAZIANO
2802 Harford Rd., Baltimore 18, Md.
- THOMAS A. HEDRICK
338 Lincoln St., Johnstown, Pa.
- NEWTON W. HERSHNER, JR.
211 W. Main St., Mechanicsburg, Pa.
- ASHER HOLLANDER
800 S. Federal Highway, Hollywood, Fla.
- LORMAN L. HOOPES
17 S. Main St., Minot, N. D.
- JAMES S. HUNTER, JR.
925 6th St., S.W., Rochester, Minn.
- VITA R. JAFFE
6301 W. Holbert Rd., Bethesda, Md.
- NORVAL F. KEMP
106 Sherman Place, Jersey City 7, N.J.
- K. KENNETH KRULEVITZ
1002 Ingleside Ave., Baltimore 28, Md.
- FRANK E. LACH
181 Edwards St., New Haven, Conn.
- FRANKLIN LESLIE
2929 N. Charles St., Baltimore 18, Md.
- JOSE S. LICHA
1394 Ferria St., Santurce, San Juan, P.R.
- THOMAS F. LUSBY
824 Buckingham Rd., Cumberland, Md.
- RAYMOND MALOUF
52 North 1st St., Logan, Utah
- JACOB B. MANDEL
55 Central Park, W., New York 23, N. Y.
- WILLIAM A. MITCHELL
106 E. Burke Ave., Luikin, Texas
- JOSE G. MOLINARI
16 Palo Seco Rd., Bay View Catano, P. R.
- MARGARET MORGAN
1100 W. Michigan St., Indianapolis 7, Ind.
- FELIX R. MORRIS
953 E. Main St., Bridgeport, Conn.
- WILLIAM H. MORRISON
St. Michaels, Md.*
- JAMES J. NOLAN
416 Kensington Rd., Baltimore 29, Md.
- MIGUEL NAVOA-CABALLERO
36 Ruiz Belvis St., Caguas, P. R.*
- IDALIA ORTIZ-ORTIZ
Presbyterian Hospital, Santurce, P. R.*
- MARGARET V. PALMER
Easton, Md.
- BENJAMIN PASAMANICK
Columbus Psychiatric Inst., Columbus 10, Ohio
- THOMPSON PEARCY
317 Atlas Bldg., Charleston, W. Va.

* Last known address.

ALUMNI ASSOCIATION SECTION

JOSHUA M. PERMAN
135 Central Park, W., New York 23, N. Y.

IRENE PHRYDAS
Vet. Adm. Hosp., 105 Pryor St., N.E.,
Atlanta 3, Ga.

CHARLES E. PRUITT
14 "A" St., Brunswick, Md.

FRANCIS S. RENNA
20 Morris Ave., Morristown, N. J.

WALTER J. REVELL
Louisville, Ga.

CHARLES RICHARDSON, JR.
Bel Air, Md.

MARION B. RICHMOND
3560 Marquette, Dallas 25, Tex.

CHRISTIAN F. RICHTER
1001 St. Paul St., Baltimore 2, Md.

JONAS S. ROSENBERG
5330 Thrill Place, Denver 6, Colo.

CLYDE A. ROSSBERG
2436 Washington Blvd., Baltimore 30, Md.

ROBERT B. SASSER
R.D. #2, Upper Marlboro, Md.

WILLIAM H. SAWYER, JR.
126 Maiden Choice Lane, Baltimore 29, Md.

JOHN A. SCHOLL
36 Hurley St., Belmont 78, Mass.

PEARL HUFFMAN SCHOLZ
11 Blythewood Rd., Baltimore 10, Md.

STANLEY E. SCHWARTZ
420 Lincoln Rd., Miami Beach, Fla.

EDWIN L. SEIGMAN
Box 105, Bunn Drive, Rocky Mount, N. C.

EDWARD P. SHANNON
2425 Geary Blvd., San Francisco 15, Cal.

JOSEPH C. SHEEHAN
69 Franklin St., Annapolis, Md.

ELIZABETH BROWN SHERRILL
Cockeysville, Md.

THOMAS C. SIMS
Whitesville, West Va.

BENEDICT SKITARELIC
R.D. 9, Cumberland, Md.

TRACY NEIL SPENCER, JR.
805 Montrose Drive, South Charleston,
West Va.

HENRY R. SPINNLER
St. Joseph's Hospital, Paterson, N. J.*

JOHN S. STEVENS
10 Washington Ave., Bridgeport 4, Conn.

WEBSTER M. STRAYER, JR.
2616 W. 102nd St., Inglewood, Calif.

RAYMOND K. THOMPSON
1125 N. Calvert St., Baltimore 2, Md.

RICHARD W. TREVASKIS, JR.
220 Baltimore Ave., Cumberland, Md.

GEORGE J. ULRICH
539 San Ysidro Rd., Santa Barbara, Calif.

EDMUND J. VIRUSKY
Baxley, Ga.

JAMES H. WALKER
1323 Quarrier, Charleston, West Va.

LESTER AUBREY WALL, JR.
4407 Underwood Rd., Baltimore 18, Md.

DAYTON O. WATKINS
6013 Inwood, Hyattsville, Md.

JOHN B. WELLS, JR.
306 Cedarcroft Rd., Baltimore 12, Md.

THOMAS C. WILDER
112 West 24th Ave., Spokane, Wash.

EDWIN F. WILSON, JR.
55 E. 2nd St., Riverhead, L. I., N. Y.

KAZUO YANAGISAWA
50 E. 52nd St., New York 22, N. Y.

JOHN D. YOUNG, JR.
3709 Cedar Drive, Baltimore 7, Md.

KENNETH L. ZIERLER
4004 Alto Rd., Baltimore 16, Md.*

Class of 1946

JESSE H. ARNOLD, JR.
400 Glenwood St., Kinston, N. C.

CHARLES H. AUDET, JR.
3 2nd Ave., Waterbury 10, Conn.

ROBERT J. AUDET
132 E. Mountain Rd., Waterbury, Conn.

JEANNE AMLICHE AUDET
132 E. Mountain Rd., Waterbury, Conn.

WILLIAM J. BANNEN
P. O. Box 248, Simpsonville, S. C.

ROBERT E. BAUER
1680 Meridian Ave., Miami Beach 39, Fla.

WALTER J. BENAVENT
122 E. Roosevelt Ave., Hato Rey, P. R.

ALFRED D. BONIFANT
Sandy Spring, Md.

LOWELL R. BROSEMER
5788 Gloria Drive, Sacramento 22, Calif.

* Last known address.

- ELI M. BROWN
13123 LaSalle, Huntington Woods, Mich.
- ROBERT R. BROWN
120 E. Main St., Romney, West Va.
- LOUISE P. BUCKNER
Veterans Adm. Hospital, Albany 8, N. Y.
- HAROLD V. CANO
391 Main St., Box 436, Spotswood, N. J.
- WILLIAM F. CARR
2400 Market St., Harrisburg, Pa.
- THOMAS W. CHRISTOPHER
46 Church St., Dedham, Mass.
- SIDNEY CLYMAN
2070 Grand Concourse, New York 58, N. Y.
- FRANCIS I. CODD
P. O. Box 289, Severna Park, Md.
- JEROME COHN
Vet. Adm. Hospital, Salt Lake City 13, Utah
- THOMAS B. CONNOR
University Hospital, Baltimore 1, Md.
- RICHARD J. CROSS
104 W. Madison St., Baltimore 1, Md.
- WALTER L. CROUCH
P. O. Box 508, Wilmington, N. C.
- JOSEPH D'ANTONIO
Church Home & Hospitals, Baltimore 31.
- JOSE DIAZ-CAROZO
1475 Wilson Ave., San Juan, P. R.
- GUY KENNETH DRIGGS
1035 N. Zangs Blvd., Dallas 8, Tex.
- VINCENT O. EARECKSON, JR.
300 S. Hanson St., Easton, Md.
- HERMAN L. EARNHARDT, JR.
2301 Fall Hill Ave., Fredericksburg, Va.
- JAMES L. EAVEY
3901 N. Charles St., Baltimore 18, Md.
- JOSEPH S. FISCHER
50 Central Park, W., New York 23, N. Y.
- PAUL E. FRYE
1244 Sunsetview Drive, Akron 13, Ohio
- SAMUEL D. GABY
2415 Diana Rd., Baltimore 9, Md.
- JOHN R. GAMBLE
Box 270, Lincolnton, N. C.
- WILLIAM D. GENTRY, JR.
Medical Arts Bldg., Baltimore 1, Md.
- JAMES J. GERLACH
4 E. Eager St., Baltimore 2, Md.
- ABRAHAM A. GOETZ
596 S. Carroll Ave., Sunnyvale, Calif.
- H. WILLIAM GRAY
4501 Conn. Ave., N.W., Washington 8, D. C.
- DUANE L. GREENFIELD
833 S. Phillips Ave., Sioux Falls, S. D.
- LELAND J. HANSEN
3760 12th St., Riverside, Calif.
- HENRY C. HARDIN
25 S.E. 2nd Ave., Miami 32, Fla.
- JOHN B. HARLEY
Box 19, Route 4, Morgantown, West Va.
- CHARLES W. HAWKINS
744 McCallie Ave., Chattanooga, Tenn.
- CHARLES A. HEFNER
920 S. Jefferson St., Roanoke 16, Va.
- EDWIN HENDRICKSON
5020 Rodeo, Los Angeles, Calif.
- HARRY E. HILL
8819 Roseda Blvd., Northridge, Calif.
- J. POULSON HUNTER
3007 Highland Drive, Salt Lake City 6, Utah
- NATHAN B. HYMAN
1805 Eutaw Place, Baltimore 17, Md.
- E. R. JENNINGS
2835 Parkwood Drive, Brunswick, Ga.
- AUGUST KIEL, JR.
2 W. Read St., Baltimore 1, Md.
- HARRY G. R. KNAPP
Rifle, Colo.
- LAWRENCE J. KNOX
Olney, Ill.
- JOHN H. LATIMER
508 S. Temple St., Salt Lake City 6, Utah
- HERBERT J. LEVICKAS
5305 East Drive, Baltimore 27, Md.
- ALLAN MACHT
2 E. Read St., Baltimore 2, Md.
- LEONARD T. MAHOLICK
1327 Warren Williams Rd., Columbus, Ga.
- RAYMOND B. MARKLEY, JR.
Medical Arts Bldg., Baltimore 1, Md.
- CHARLES B. MARSHALL, JR.
202½ Quarrier St., Charleston, West Va.
- GEORGE MASSENBURG, JR.
1 Jackson Spring Rd., Macon, Ga.
- OTTO S. MATTHEWS
Warsaw, N. C.
- ROBERT EUGENE MAY
1200 Woodbourne Ave., Baltimore 12, Md.

* Last known address.

ALUMNI ASSOCIATION SECTION

GEORGE McELFATRICK
830 E. Belvedere Ave., Baltimore 10, Md.

THOMAS C. McPHERSON
1938 Peachtree Rd., N.W., Atlanta 9, Ga.

CLARENCE E. McWILLIAMS
Reisterstown & Cherry Hill Rd.,
Reisterstown, Md.

JOSEPH MINTZER
81 Lake Ave., Saratoga Springs, N. Y.

JOHN A. MITCHELL
9 E. Mt. Royal Ave., Baltimore 2, Md.

JOHN E. MORRISON
Norwich State Hospital, Norwich, Conn.

JEROME D. NATARO
Ironwood Rd., R.F.D., Syosset, N. Y.

POMEROY NICHOLS, JR.
1467 Harper St., Augusta, Ga.

ELLSWORTH H. NORTH, JR.
1502 Carolina Ave., Elizabeth City, N. C.

JAMES S. O'HARE
104 W. Madison St., Baltimore 1, Md.

WM. W. ORRISON
Rainbow Blvd. at 39th St., Kansas City 12,
Kan.

HORACE H. OSBORNE
U.S.A.F.

ARTHUR J. OWEN
1200 E. Belvedere Ave., Baltimore 12, Md.

WILLIAM F. PARK
U.S.N.

EARL R. PAUL
36 Greene St., Cumberland, Md.

CLEMMER M. PECK
430 Monterey Ave., Los Gatos, Calif.

LOIS I. PLATT
2300 K St., N.W., Washington 7, D. C.

JOHN C. RAWLINS
Seaford, Del.

MILTON REISCH
104 E. 40th St., New York 16, N. Y.

RALPH A. REITER
112 Bedford St., Cumberland, Md.

ROBERT A. RILEY
14 Spa View Circle, Annapolis, Md.

JAMES A. ROBERTS
8907 Georgia Ave., Silver Spring, Md.

ROBERT C. ROSSBERG
1660 S. Alameda St., Los Angeles 21, Calif.

SIDNEY SACKS
10900 Carnegie Ave., Cleveland 6, Ohio

JAMES A. SEWELL
64 Garden St., Hartford, Conn.

FRANK A. SHALLENBERGER, JR.
5455 E. 2nd St., Tucson, Ariz.

DAVID N. SILLS, JR.
11 S.E. Front St., Milford, Del.

EDWARD P. SMITH, JR.
1409 F. Paegelow, Scott AFB, Ill.

CLINTON W. STALLARD, JR.
Box 711, Montgomery, West Va.

HERBERT SWINDELL
U.S.A.F.

LEON TOBY
1569 N. Halsted St., Chicago 22, Ill.

JAMES A. VAUGHN, JR.
5965 Ponce de Leon Blvd., Coral Gables, Fla.

PHYLLIS PETERSON VAUGHN
5965 Ponce de Leon Blvd., Coral Gables, Fla.

ELLIOTT L. WEITZMAN
Bronx Municipal Hosp., New York 61, N. Y.

IRL J. WENTZ
Medical Arts Bldg., Salisbury, N. C.

WALTER McILHANEY WOLFE
U.S.A.

JOSEPH B. WORKMAN
Ligon Rd., R.F.D. #5, Ellicott City, Md.

ALEXANDER W. YOUNG, JR.
420 E. 64th St., New York 21, N. Y.

RICHARD A. YOUNG
101 King St., Hagerstown, Md.

Class of 1951

LAW L. AGER
1100 S. 31st St., Birmingham 5, Ala.

ROBERT K. ARTHUR, JR.
318 Westwood Ave., High Point, N. C.

JOHN P. BARTHEL
1911 First Ave., S.E., Cedar Rapids, Ia.

EARL M. BEARDSLEY
Maryland Ave., Salisbury, Md.

ARTHUR K. BELL
1170 Sylvania Ave., Toledo 12, Ohio

JOSEPH BILDER, JR.
2301 S. Austin, Denison, Tex.

BEVERLY R. BIRELY
837 N.E. 20th Ave., Fort Lauderdale, Fla.

NANCY BLADES
2767 Eugenie Lane, Cincinnati 11, Ohio

JOHN WESLEY BOSSARD
115 Medical Center Bldg., Fort Wayne, Ind.

BULLETIN OF THE SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

- JOHN V. BRANNON
Bridgeport, W. Va.
- JOHN R. BUELL, JR.
305 Compton Ave., Laurel, Md.
- RUSSELL L. CHRISTOPHER
2707 Portsmouth, Houston 6, Tex.
- RAYMOND CLEMMENS
522 Goucher Blvd., Towson 4, Md.
- KAHLIN M. COFFMAN
Montoursville, Pa.
- SOLOMON COHEN
2400 Geary St., San Francisco 15, Calif.
- RAYMOND R. CURANZY
39 E. Maple St., Palmyra, Pa.
- JOSEPH DECKELBAUM
4017 Liberty Heights Ave., Baltimore 7, Md.
- ERNEST DETTBARN
Walkersville, Md.
- LEON DONNER
4023 Brookhill Rd., Baltimore 15, Md.
- WINSTON C. DUDLEY
Vet. Adm. Hospital, Fort Howard, Md.
- GEORGE M. DUNN, JR.
Princess Anne, Md.
- WILLIAM DUNNAGAN
N. C. Memorial Hosp., Chapel Hill, N. C.*
- DAVID E. EDWARDS
1120 St. Paul St., Baltimore 2, Md.*
- WILLIAM H. EDWARDS
2 E. Read St., Baltimore 2, Md.
- WILLIAM G. ESMOND
5018 Baltimore National Pike,
Baltimore 29, Md.
- OTIS D. EVANS, JR.
427 Charlotte St., Asheville, N. C.
- CHARLES K. FERGUSON
2688 Bonnie Drive, Cincinnati 30, Ohio
- JOSEPH FITZGERALD
512 Elbert Ave., Salisbury, Md.
- ROWLAND E. J. FULLILOVE
Memorial Hospital, Chapel Hill, N. C.
- JAMES P. GALLAHER
Medical Center, Salisbury, Md.
- MARIO R. GARCIA-PALMIERI
Univ. of Puerto Rico School of Medicine,
San Juan 22, P. R.
- FRANCIS S. GARDNER, JR.
U.S.A.F.*
- JOHN B. GATES
510 West 27th St., Merced, Calif.
- BENJAMIN D. GORDON
2857 Main St., Stratford, Conn.
- DORRIS M. PENCHOFF HARRIS
4621 Coliseum St., Apt. 9, Los Angeles 16,
Calif.
- FREDERICK J. HATEM
908 S. Washington St., Havre de Grace, Md.
- ROBERT C. HOPKINS
Lake City, Pa.
- GEORGE J. ITEN
Orrville, Ohio
- FREDERICK M. JOHNSON
La Plata, Md.
- WALLACE E. JOHNSON
137 Main St., Dayton 2, Ohio
- PAUL E. KASCHER
Vet. Adm. Hospital, Albany 8, N. Y.
- WILLARD F. KINDT
601 Hanover Ave., Allentown, Pa.
- VICTOR F. KING
1102 E. Joppa Rd., Baltimore 4, Md.
- DAVID M. KIPNIS
Washington Univ. School of Medicine,
St. Louis, Mo.
- HARRY L. KNIPP
4116 Edmondson Ave., Baltimore 29, Md.
- HOWARD C. KRAMER
Vet. Adm. Hospital, Fort Howard, Md.
- WILLIAM E. LAMB
Ocean Way, Fla.
- THEODORE R. LANNING
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I herewith transmit my annual MEMBERSHIP DUES of \$10.00 to the Medical Alumni Association of the School of Medicine, University of Maryland from May 1, 1960, to April 30, 1961, \$3.00 of which is for a subscription to the BULLETIN of the School of Medicine, University of Maryland, for one year.

Make checks payable to Medical Alumni Association.

Dr. _____

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Class

NOTES

ELSEWHERE in this edition you will find a "tear out" page, for reporting *Alumni News* to the BULLETIN. This is not an idle gesture.

Your achievements, fellow alumnus, are of interest to your classmates. They constitute a reward to the faculty, are a challenge to the younger physicians, and are an item of prestige for the University. Please cooperate with us by forwarding news of yourself or any alumnus to the BULLETIN. Thank you.

B. M. C. 1897

George D. Gohn of 8 St. John Place, Port Washington, N. Y., died recently.

Class of 1900

Irving J. Spear of the Marlborough Apartments, 1701 Eutaw Place, Baltimore, Md., died on February 8, 1961. Dr. Spear was 84.

B. M. C. 1901

R. Gibson Perry of Wells River, Vt., a distinguished surgeon now retired, has recently suffered a major illness and is now recovering at the home of a granddaughter in Burlington, Vt.

Class of 1903

Joseph Gamewell Evans of 1388 Amar Street, San Pedro, Calif., died recently.

B. M. C. 1904

Matthew J. Sullivan of 2 East Main Street, Stony Point, N. Y., died on August 27, 1960. Dr. Sullivan was 80.

B. M. C. 1906

George R. Curry of 2002 Trooper Road, Reading, Pa., died recently.

B. M. C. 1909

Herman F. McPherson of Queen Anne, Md., died on September 16, 1960. Dr. McPherson was 76.

P & S 1909

Chadbourne A. Andrews of 706 Franklin Street, Tampa, Fla., died January 2, 1961.

B. M. C. 1910

Frederick A. Lobb of Honesdale, Pa., died recently.

Class of 1911

Charles A. Waters of Gibson Island, Md., died January 9, 1961.

Class of 1913

William O. Wrightson of Spartanburg, S. C., died September 10, 1960 of myocardial infarction. Dr. Wrightson was 71.

Class of 1915

Harry L. Rogers, who for many years served as Chief of Orthopedic Surgery at the Lutheran Hospital of Maryland, recently resigned. Dr. Rogers was replaced by Dr. Milton J. Wilder.

Bascom Lee Wilson of 1807 37th Street, N.W., Washington, D. C., died on September 12, 1960. Dr. Wilson had retired from the Armed Forces where he served as Colonel in the Medical Corps (U.S.A.F.).

Class of 1920

Joseph Austin Clarken of 27 Ingraham Place, Newark, N. J., died December 28, 1960.

After many years as superintendent of the Rosewood (Maryland) State Training School, **Dr. George C. Medairy** has retired.

On January 31, the Medical Consultants Association postponed its business agenda and turned its regular quarterly

meeting into a farewell party for Dr. Medairy. A testimonial dinner was served, Dr. Conrad Acton presiding. Dr. C. Reid Edwards was the chief speaker. Dr. Morris Reese, a classmate of Dr. Medairy's, delivered a resolution from the Baltimore County Medical Association praising Dr. Medairy's administration.

Class of 1925

Samuel S. Glick has been promoted to Associate Professor of Clinical Pediatrics in the School of Medicine. Dr. Glick is also a member of the National Executive Committee and Board of Trustees of the Phi Delta Epsilon Medical Fraternity.

Class of 1930

Joseph J. Smith of Easton, Conn., serves as Chief of Medicine at the Bridgeport Connecticut Hospital and was recently elected president of the Connecticut State Heart Association. Previously Dr. Smith served two terms as president of the Bridgeport Heart Association.

Class of 1931

Members of the Class of 1931 have established the Christopher C. Shaw Student Loan Fund by way of an initial deposit of \$900 with the Dean of the School of Medicine. A detailed account of the establishment of the Fund is contained in another section of this edition of the BULLETIN. Members of the Class of 1931 are invited to participate and should contact either the Dean of the School of Medicine or Dr. V. Kindsvatter, Medical Dispensary, U. S. Naval Base, Philadelphia 12, Pa. The student loan fund thus established meets a very pressing need in the School of Medicine.

Class of 1933

Stephen Sewell has been nominated Chief of the Neurological Service of the U. S. Veterans Administration Hospital at Lyons, N. J. Dr. Sewell recently published a research paper entitled "Serum Acid and Alkaline Phosphatase Values in the Adult Male." The paper appeared in the November 1960 *American Journal of the Medical Sciences*. Dr. Sewell is also an author of a paper on "Mediastinal Emphysema as a Complication of Bronchoscopy" published sometime ago in the *Annals of Internal Medicine*. Dr. Sewell resides in Spring Lake, N. J.

Class of 1939

Herbert Spiegel serves as Associate Professor of Psychiatry at the College of Physicians and Surgeons of Columbia University, New York City, and also is Visiting Assistant Professor in the Department of Psychiatry at the School of Medicine, Emory University in Atlanta. Dr. Spiegel, who is in the private practice of psychoanalysis and psychiatry, has his office at 19 E. 88th Street in New York City.

Milton J. Wilder has been named Chief of the Orthopedics service at the Lutheran Hospital of Maryland.

Dr. Wilder replaces Dr. Harry L. Rogers, who served as Chief of Orthopedics for many years and who recently resigned his appointment.

Class of 1945

Daniel O. Hammond has recently published a paper entitled "A New Pediatric Gynecologic Examining Instrument for Use in Diagnosis of Pediatric Vaginitis." The paper was published in the *American Journal of Obstetrics and Gynecology*, appearing in the July 1960 number. Dr. Hammond serves as Assist-

ant Clinical Professor in the Department of Obstetrics and Gynecology at the University of Miami School of Medicine, Miami, Fla.

Class of 1947

Donald E. Fisher has been named public health physician of Carroll County, Md., effective June 22, 1960. Dr. Fisher, who was formerly engaged in general practice in Ellicott City, Md., completed the requirements for the Master of Public Health Degree at the Johns Hopkins University School of Hygiene in June 1960. Dr. Fisher continues to reside at his Ellicott City address.

Class of 1949

George W. Knabe, Jr. became Professor and Chairman of the Department of Pathology of the State University of South Dakota School of Medicine on November 1, 1960.

Dr. Knabe was formerly active on the staff of the Department of Pathology at the University of Puerto Rico and served as Chief of the Clinical Laboratory of the University Hospital there. Prior to that, he had served as Medical Education Advisor to the International Cooperation Administration in San Salvador, Republic of El Salvador.

Class of 1952

David E. Graham and **Lowell E. Brittain** are now engaged in a general practice partnership with offices at 1421 Eastway Drive in Charlotte, N. C. Dr. Graham was formerly of Spruce Pine, N. C.

Class of 1953

Leonard B. Glick is now living in New Guinea where he is engaged in a psychosomatic and anthropologic study of primitive peoples. Dr. Glick is a graduate student in the Department of Anthropology of the University of Pennsylvania.

Class of 1958

Robert B. J. Mulvaney has been named Chairman of the Medical Social Welfare Committee of the Essex (New Jersey) County Medical Society. Dr. Mulvaney is presently serving a residency in Pathology at the Martland Medical Center in Newark, N. J. He is also Deputy Medical Director of Civil Defense for the City of Newark. (The above corrects a misstatement of fact contained in the January 1961 BULLETIN, page XXXV.)

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TEAR OUT

July, 1961 • VOLUME 46 • NUMBER 3

BULLETIN

School of Medicine
University of Maryland



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SCHOOL OF MEDICINE OF THE UNIVERSITY OF MARYLAND

AND THE MEDICAL ALUMNI ASSOCIATION

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VOLUME 46

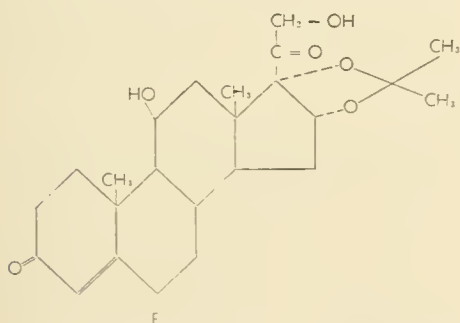
JULY, 1961

NUMBER 3

Flurandrenolone Acetonide

HARRY M. ROBINSON, JR., M.D.*

FLURANDRENOLONE, a new steroid (C₂₄ H₃₃ FO₆), is a colorless crystalline solid. The chemical formula, 6 α fluoro-16 α -hydroxy-hydrocortisone-16, 17-acetonide, has the following structure:



Substitution of an alpha fluorine atom for hydrogen at the steroid 6-position, the addition of a hydroxyl group at the 16-position and formation of an acetonide linkage with the 16, 17 alpha hydroxyl groups increased the anti-inflammatory

property over the parent compound, hydrocortisone. At the same time the salt-retaining property of the parent compound, hydrocortisone, is decreased.¹

On the basis of thymus involution in adrenalectomized rats, flurandrenolone appeared to have about 10 times the oral potency of prednisolone and from 15 to 20 times the potency of prednisolone when injected subcutaneously. In sodium loaded adrenalectomized rats flurandrenolone did not cause sodium retention at doses up to 6 mg. per kilogram. Instead a mild diuresis and naturesis occurred.¹

This steroid, alone and in combination with neomycin, in cream and ointment bases has been submitted for evaluation. This report summarizes the results of studies with flurandrenolone acetonide in the topical therapy of dermatoses normally responsive to local steroid therapy.

Preparations used: Flurandrenolone acetonide was prepared in a vanishing cream base and in an oily ointment base, each preparation containing 0.05% of the steroid. Flurandrenolone acetonide

From the Division of Dermatology, Department of Medicine, School of Medicine, University of Maryland, Baltimore.

The flurandrenolone acetonide preparations used in this study were furnished by Dr. A. S. Ridolfo of the Eli Lilly Co., Indianapolis, Indiana.

* Professor of Dermatology, School of Medicine, University of Maryland, Baltimore.

Chart 1—Double Blind Study with Topical Steroid Preparations

Diagnosis	No. of patients	Control		Flurandrenolone Acetonide 0.05%			Triamcinolone Acetonide 0.1%			1.0% Hydrocortisone			0.5% Prednisolone		
				Improved	Unimproved	Effectivity Equal	Improved	Unimproved	Effectivity Equal	Improved	Unimproved	Effectivity Equal	Improved	Unimproved	Effectivity Equal
Atopic dermatitis	11	0	11	11	0	6 5 0	11	0	6 5 0	9	2	5 0 6	9	2	5 0 6
Contact dermatitis	10	0	10	10	0	5 5 0	10	0	5 5 0	7	3	5 0 5	7	3	5 0 5
Seborrheic dermatitis	13	0	13	10	3	5 5 0	10	3	5 5 0	8	5	3 0 5	8	5	3 0 5
Localized neurodermatitis	9	0	9	9	0	7 2 0	9	0	7 2 0	8	1	7 0 1	8	1	7 0 1

(0.05%) in combination with neomycin (5 mg. per gm.) was prepared in both ointment and the vanishing cream bases. The preparations were dispensed in 15 gm. collapsible metal tubes.

Patient selection: Patients included in this study were examined and treated at the University Hospital dermatology out-patient clinic, hospitalized patients, and the author's private practice.

Double Blind Study: In the double blind study, flurandrenolone acetonide ointment and cream were compared to prednisolone cream, 0.1% triamcinolone acetonide cream, and 1% hydrocortisone ointment.

Method: Previous studies^{2, 3, 4} demonstrated the value of topically applied steroids in the treatment of various dermatoses. A double blind study was conducted on 43 patients using a control, flurandrenolone acetonide cream 0.05%, triamcinolone acetonide cream 0.1%, 1% hydrocortisone ointment and 0.5% prednisolone cream. The patients selected for this study were those who had dermatoses normally responsive to topical steroid therapy (Chart 1). After the value of the 0.05% flurandrenolone acetonide cream had been demonstrated in the double blind study, ointment and cream containing this steroid in the same concentration were used in the treatment of

a large number of patients to determine its actual value as a therapeutic agent (Chart 2). In this portion of the study, patients were furnished with 15 gm. tubes of flurandrenolone acetonide ointment or cream and instructed to apply a thin film of the preparation to the involved area without rubbing, twice daily.

Combinations of flurandrenolone acetonide and neomycin in ointment and cream bases were used in the treatment of patients who had dermatoses complicated by secondary pyogenic infection.

Chart 2—Flurandrenolone Cream and Ointment (0.05%) Topical Treatment of Dermatoses

Condition	No. of patients	Im- proved	Unim- proved	Lost from observ- ation
Atopic dermatitis	39	33	1	5
Seborrheic dermatitis	16	13	2	1
Contact dermatitis	27	26	0	1
Localized neurodermatitis	31	29	1	1
Perianal eczema	19	17	0	2
Eczema of vulva (Seborrheic dermatitis) (Neurodermatitis)	8	8	0	0
Eczematous dermatitis	26	23	1	2
Nummular eczema	7	6	1	0

Results

Double blind study (Chart 1). The results of the double blind study indicated that flurandrenolone acetonide in a (0.05%) cream base is as effective as 0.1% triamcinolone acetonide in a cream base in the treatment of eczematous eruptions. Flurandrenolone acetonide (0.05%) cream proved to be superior to 1.0% hydrocortisone ointment and 0.5% prednisolone cream in the treatment of the eczematous eruptions observed in this study.

Extended study (Chart 2). Both the ointment and cream containing 0.05% flurandrenolone acetonide were used in the treatment of an additional 173 patients with various dermatoses normally responsive to topical steroid therapy. Whether or not the ointment or cream was prescribed depended to a large extent on the personal preference of the patient. In conditions where extensive dryness was a factor, the ointment was used. In the total series of 173 patients, 12 were lost from observation, 6 were unimproved, and 155 were definitely benefited by the topical application. The results reported in Charts 1 and 2 represent an objective evaluation of the therapeutic effect of flurandrenolone acetonide ointment and cream.

A recurrence of the eruption was noted in all instances except allergic contact dermatitis when topical applications of the flurandrenolone acetonide ointment or cream were discontinued. Improvement was observed when applications of the medications were resumed.

Fifty-two patients with dermatoses complicated by secondary pyogenic infection were treated with flurandrenolone acetonide (0.5%) in combination with neomycin (5 mg. per gm.) prepared in ointment and vanishing cream bases. The

combination of the antibiotic with the steroid proved to be effective in the treatment of the secondary pyogenic infection and the underlying eczematous eruption. It was apparent that the antibiotic did not inhibit the action of the steroid and the steroid did not alter the action of the antibiotic.

Comment

On topical application in ointment and cream base, flurandrenolone acetonide in a concentration of 0.05% proved to be as effective as 0.1% triamcinolone acetonide in a similar vehicle and superior in effect to 1.0% hydrocortisone ointment in the treatment of dermatoses normally responsive to topical steroid therapy. A combination of neomycin (5 mg. per gm.) with flurandrenolone acetonide (0.05%) in ointment or cream base proved to be effective in the treatment of secondarily infected eczematous eruptions.

Adverse reactions to flurandrenolone acetonide ointment or cream, or the combination of the steroid with neomycin, were not encountered in this study.

Summary and Conclusion

1. On topical application in ointment and cream base 0.05% flurandrenolone acetonide proved to be as effective as 0.1% triamcinolone acetonide in similar bases in the treatment of dermatoses normally responsive to topical steroid therapy.

2. In a double blind study, flurandrenolone acetonide and triamcinolone acetonide in ointment and cream bases were equally effective and both proved to be superior to 1.0% hydrocortisone in similar bases in the treatment of dermatoses normally responsive to topical steroid therapy.

3. Evidence of adverse reactions to 0.05% flurandrenolone acetonide cream or lotion were not encountered in this study.

4. A combination of 0.05% flurandrenolone acetonide and neomycin (5 mg. per gm.) in ointment or cream base proved to be effective in the treatment of eczematous eruptions complicated by secondary pyogenic infection.

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Fanconi's Anemia: Report of a Case

GEORGE LENTZ, M.D.*

IN 1927, Fanconi¹³ described three siblings who developed pancytopenia, abnormal pigmentation, and who later expired in aplastic crises at similar ages. Since that time, 100 cases of this syndrome have appeared in the literature. The purposes of this paper are to report this disorder in a 12-year-old female with a seven-year-old sister who is beginning to show evidence of its development, and to present a review of the literature with special regard to a possible etiological basis.

Case Report

The patient, C. E., aged 12 years, was referred by her private physician for definitive diagnosis and study of her anemia.

Past History. The gestation was uneventful, with no known hemorrhage, infections, or exposure to toxic agents or radiation. The delivery and neonatal period were uneventful, except that the patient was noticed to have a rudimentary left thumb. Her growth and development were considered normal.

Family History. The parents were in good health as were the maternal grandparents. The paternal grandfather died of leukemia at age 51 yrs. One sibling age seven yrs. had developed anemia and a pigmentation similar to that of her sister. She had no detectable anomalies.

Present Illness. Except for the usual childhood illness, the patient has been in good health. The mother sought medical advice in regard to an increase in the patient's skin pigmentation appearing at the age of five years. At this time and at subsequent routine examinations, the hemogram was normal. In July 1958, when the patient was 12 years of age, she was noted to be lethargic and pale, and a severe anemia

was discovered. No bruising or jaundice were present, and no evidence or record of blood loss was found.

Physical Examination. Measurements: Weight, 55 pounds; height, 54 inches. (Norms for age are 87 pounds and 59 inches.) BP, 126/70. P=82/min. R=20/min. The patient was a short, thin girl with evident pallor. The sallow complexion was complemented by scattered deep yellow plaques of pigmentation. There were numerous flat, black nevi over the entire body. The eyes were small. Examination of the extremities revealed a rudimentary left thumb with absence of the first metacarpal. The rest of the examination was normal, including the genitalia and secondary sex characteristics.

Course. The patient had received no medications or tonics prior to admission. A trial course of prednisolone was given without hematologic response. No blood transfusion has been given as yet. At present she has signs of adreno-cortical hypoplasia as evidenced by poor marrow response to exogenous steroids and decreased urinary corticosteroids. Amino acid studies are being conducted upon the urine.

Sibling. The sibling had a general physical examination and no physical abnormalities were found, save pigmentary changes of the skin similar to those her sister developed at an earlier age. No detailed studies have been performed as yet.

Laboratory Data

BLOOD CHEMISTRIES

Blood Sugar	90 mg %
Carbon Dioxide	20 meq/Liter
Sodium	138 meq/Liter
Chloride	104 meq/Liter
Potassium	4.3 meq/Liter
Albumin/Globulin	5.3/1.6 gm/100cc.
Cholesterol	198 mgm %
Calcium	9.8 mgm %
Phosphorus	4.8 mgm %
Glucose-Tolerance Test	Normal

From The Department of Pediatrics, School of Medicine, University of Maryland, Baltimore.

* Present address, Fort Benning, Georgia.

Laboratory Data

HEMATOLOGY

	1955	1956	1958	4 7 59	6 9 59
Hemoglobin (Gm.)	11.0	10	6.7	6.2	6.9
Erthrocytes (mil.)	4		1.6	1.6	1.4
Hematocrit			18	18	17
Reticulocytes (%)			1.8	1.6	2.0
Leukocytes	6000	7000	5200	4600	1700
Differential cell count Pmn's Lymphs Monos	60-40		14-51-12	15 79-5	18-78
Platelets	Ade-quate		28,000		35,000
Marrow			Hypo-plastic	Aplastic	Aplastic

Special Blood Studies Revealed the Following: Blood Type, RH(O)+; Coombs Test, negative; Prothrombin Time, normal; Osmotic Fragility, normal.

FAMILY HEMOGRAMS

	Sister	Father	Mother
Hemoglobin (Gm.)	11.2	14.7	12.9
Erthrocytes (mil.)	2.8	4.7	4.3
Hematocrit	40	40	38
Reticulocytes (%)	2.0	0.4	0.5
Leukocytes	5300	8600	10,000
Differential cell count Pmn's Lymphs Monos	50-50	65-35	
Platelets	200,000	330,000	400,000

SPECIAL STUDIES

Endocrine: Protein-Bound Iodine 4.0 micrograms

Thorn Test, negative

Urine: 17 Keto-Steroids 2.9-5.3 mg/24 hours
17 Hydroxy Steroids 5.1-9.8 mg/24 hours

ROENTGENOGRAPHIC STUDIES

General demineralization of bone, abnormal development and hypoplasia of the left first metacarpal, with ill defined carpal bones. Examination of the skull was normal.

Review of Literature

Since Fanconi¹³ first described the syndrome, between 80 and 100 cases

have been reported. This variability has been due to inclusion by some authors of cases which do not fit the more rigid criteria of other authors. Some authors¹¹ have classified as Fanconi's Anemia cases of aplastic anemia occurring in families without detectable congenital anomalies. However, these patients may represent part of a spectrum rather than a different entity. The criteria of pancytopenia, hypoplastic aplastic bone marrow, and various frequently occurring anomalies are accepted by most as necessary for a diagnosis of Fanconi's Anemia.

The latest and most comprehensive review is by Bernard *et al.*¹ The following represents a summary of their collection of cases.

Of the 80 cases felt to fulfill these criteria, 34 occurred within 14 family groups. The largest was six in a family of eight siblings. In 26 sporadic cases, the sibling had various congenital anomalies but no hematological problems. Consanguinity was reported in six different families involving 14 of the cases.

There was no sex difference. The age of onset of symptoms and diagnosis ranged from 4 to 16 years. The presenting complaint was usually anemia or epistaxis. When there was a previous sibling with the disease, the onset of the condition was more carefully documented.

Some of these abnormalities were extremely common in frequency of occurrence. In 95% of the cases, abnormal pigmentation was reported. Early, a sallowness of complexion followed by development of patchy yellowish macules was noted. This yellow appearance later became brownish in tinge—a fact that has led to extensive studies in search of an adrenal abnormality. There was also nevus formation. This pigmentation

was thought to be the result of an abnormality of melanin metabolism.¹³ There was secondary deposition of hemosiderin as a result of frequent transfusions.

Abnormalities of the extremities were seen frequently, and the most common were absence of either or both thumbs. Roentgenographic evidence of absence of, or hypoplasia of, the metacarpal and carpal bones was common. Dameshek⁶ reported two cases of bilateral absence of the radia with severe pancytopenia in the first month of life. Other abnormalities frequently seen and reported in high percentage are hypogonadism, microcephaly, strabismus, microphthalmia, mental retardation, and assorted genitourinary anomalies.

Prenatal and birth history in all cases were normal. No geographic or ethnic relationships are noted.

Hematologic studies revealed the red cells to be low in number but with normal fragility. The cell survival time was decreased to 60% of normal in three cases so studied.¹ In four of six cases studied, an increase in fetal hemoglobin to the 5-11% range was reported. The leukocyte and platelets were low in numbers but normal in all other respects. The clotting mechanism was normal. The marrow was uniformly aplastic. Interpretation of some of these hematologic abnormalities is only speculative in that they have been looked for in only a few cases.

Study of adrenal and other glandular functions have been unrevealing. The 17-hydroxy and 17-keto-steroids when tested were normal. Several instances of anthranillic acid⁸ in the urine have been reported but the significance was not commented upon.

The prognosis and outcome is ultimately and uniformly fatal from six months to four years after onset. Be-

cause of this prognosis, therapeutic procedures must be evaluated carefully. Splenectomy has been attempted in 21 cases and was felt not to be of value. Cortisone has been used in only seven instances. Iron, vitamins, Vitamin B₁₂, and liver extracts have been tried. The repeated use of frequent transfusion may be harmful because of a depressive effect on an already aplastic marrow. Also the dangers of hemosiderosis and iso-immunization must be considered.

In regards to etiology, several possibilities are presented. The majority of investigators^{1, 8, 11} believe that the association of aplastic anemia, a rare disease, with unusual congenital anomalies is more than a chance occurrence. The repeated appearance of a defect in a family would tend to indicate the influence of a dominant or recessive inheritance of an abnormal gene. Most authors agree on a genetic basis of this syndrome and consider the syndrome manifests the varying expressivity of an abnormal gene. As a result of an imperfect germ plasm an exhaustion phenomenon exists. Silver¹¹ is of the opinion that marrow study and the course of the disease bears out that the change is slow and that there is progressive failure of the marrow. Therefore, the aplastic anemia might be considered a congenital anomaly that is delayed in appearance.

An environmental etiologic possibility is considered. Repeated exposure to the same adverse environment, to result in the same picture in siblings would not appear to be likely. The cases in these families all have onset at the same chronological age and expire in the same age period in life. Furthermore, it appears that as a unit the hematopoietic system is resistant to intrauterine environmental effects from toxic agents. In

fetal rubella studies, no defects in the hematopoietic tissue are reported. Also in the atomic blast at Hiroshima, the congenital anomalies resulting from fetal irradiation during the first trimester did not and have not as yet produced hematopoietic changes.

There is the possibility that this condition may represent the result of an endocrine failure. The pituitary gland has been reported to be involved in several autopsied cases. An abnormal, small pituitary gland was reported in one case. Roentgenographic studies of the sella tursica have shown a decrease in volume of that region.¹ Endocrine studies, a task complicated by limited tools, to date have been normal in all cases so studied. Recently the existence of a pituitary erythropoietic hormone has been reported.¹² While this hormone is found in other sites, such as the kidney, it would be interesting to consider this finding along with that of decrease of stature, microcephaly, pigmentary changes, and hypogonadism as somehow related to an overall pituitary abnormality or failure.

Comment

Aplastic anemia of the Fanconi type appears to be the result of genetic inheritance.¹¹ There are other syndromes of hematopoietic failure associated with congenital anomalies. Emery⁴ reported on newborns with congenital anomalies along with a congenital amegakaryocytic thrombopenia. It is interesting to speculate that hematologic disorders may be genetically controlled. With the observation of a erythropoietic hormone in the pituitary, the possibility of a thrombopoietin and leukopoietin could be considered. A genetically controlled absence or diminished production of these substances might be responsible for the

development of such a rare and diverse syndrome as Fanconi's Anemia. Overproduction or excess could be responsible for polycythemia and leukemia.

If one could speculate that the genetic involvement is somehow associated with and related to the pituitary-adrenal axis, then many of the characteristics of Fanconi's Anemia could be explained by an inherited pituitary abnormality.

The appearance of syndromes of hematopoietic failure without congenital anomalies might be considered as a manifestation of the degree of involvement of the gland.

The findings in our patient are characteristic of Fanconi's syndrome. Her sister is developing an abnormal pigmentation and an anemia. Detailed studies including bone marrow have not been performed on the sister. The patient is now being more intensively studied for endocrine abnormality on the basis of concepts in the current literature.

Summary

A 12-year-old girl who fulfills the criteria for diagnosis of Fanconi's Anemia is presented. The possibility of her sibling developing the disease has not been verified as yet.

The literature is reviewed with special regard to a possible endocrine etiology. The currently accepted concept is one of a genetic inheritance. The possibility that the genetic inheritance may involve the endocrine axis is being considered.

This disease, while theoretically interesting and intriguing, is therapeutically frustrating, with an unfailingly fatal outcome.

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Mechanism of Action of Penicillin

KOSTA D. STOJANOVICH

PENICILLIN is one of the most valuable drugs available to humanity at the present time. It, too, appears to be one of the most potent substances ever discovered and to illustrate this statement we may say that a combination penicillin-sulfonamides could exert its activity at even such a low concentration as 1:50,000,000.¹

And yet, like almost none of the present-day drugs, we do not fully comprehend the mode of penicillin action on the unicellular bodies of bacteria to destroy them. In regard to this problem several hypotheses have been proposed, some of which are more acceptable, some less. Fortunately, however, we do seem to be approaching our goal, since the bulk of the experimental data, most of them recent, highly suggests that the cell wall of bacteria is the very part of the architectural design of these microorganisms that is intimately associated with the mode of penicillin action.

Let us discuss what happens when a penicillin-sensitive culture of *Staphylococcus aureus* in a Petri dish is being exposed to increasing concentrations of penicillin. A striking change that actually takes place is cessation of growth of the microbes. They increase twice in size; they swell, but since any further growth has stopped, it is observed that the pre-existing wall becomes progressively thinner and thinner. At the same time many other changes can be detected, such as a blockade to amino acids assimi-

lation, or a progressive respiratory failure—although respiration, *per se*, is not inhibited by penicillin.

Furthermore, depending on the osmotic conditions of the media, bacterial cells may completely, but in a crescendo process, lose their original shape. As a consequence, they may become transformed into some long, filamentous forms,² or appear as the so-called large bodies,³ or, finally, come out as the Lederberg and Bremer's spheroplasts,⁴ closely resembling the naturally occurring naked L-forms. After the alterations just mentioned have taken place, bactericidal effect of penicillin may be evident, and, as a response to all of these phenomena lysis of the bacteria usually takes place through autolysis of the killed microbe by their own enzymes.

In order to shed some light upon at least a few of these phenomena, Gale and Taylor⁵ from Cambridge, England, reported in 1947 the first data concerning the role of the bacterial cell wall in the mechanism of penicillin action. Under natural circumstances, Gram-positive cocci are notorious for nutritional dependence upon some of the environmental amino acids, glutamic acid being one of these. However, Gale and Taylor observed that in the presence of penicillin, glutamic acid would not be picked up by the bacteria. At first they thought that mechanism of glycolysis might have been inhibited since glycolysis supplied the energy necessary for the amino acids assimilation, but then it was shown that penicillin did not affect

From The Department of Pharmacology, School of Medicine, University of Maryland, Baltimore.

glycolysis at all. Since it had been noted that growth of a bacterial cell depended on the normal expansion of its wall, and since it was shown that penicillin acted only on the actively growing cells (not necessarily the actively multiplying ones, at the same time), the authors expressed their belief that penicillin either combined directly with the cell wall, and having reorganized it, prevented any further amino acids assimilation, or that penicillin somehow blocked the process of synthesis of the cell wall by acting primarily on the structures other than the cell wall itself.

Following these pioneering investigations, Cooper, in 1955, introduced a very valuable concept of a penicillin binding component—PBC, in short. Adding his name to a rather long list of the Englishmen whose lives had been dedicated to penicillin, Cooper⁶ showed that the PBC: a) was more abundant in the Gram positive, than in the Gram negative, organisms; b) was a lipid in nature, more precisely, a polyglycerophosphate; c) resided either within the cell wall itself, or on the outside surface of the cell membrane; and, that PBC d) played a vital part in cell economy.

He beautifully demonstrated that radioactive penicillin would be bound by the bacterial cells in a constant amount only, even though its concentrations were increasing in the suspending fluid. From this fact, and from the observations that only minimal amounts of penicillin could be assimilated by a single bacterium, Cooper concluded that there was, relative to a given bacterial cell, a constant and a minute amount of a substance having an active part in the life of the cell, something comparable to the enzymes or the vitamins.

Cooper believed that between penicillin on the one hand, and the PBC on the

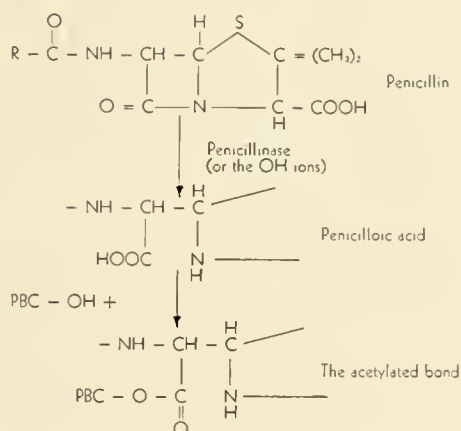


Fig. 1: Schematic representation of the most plausible reaction between penicillin and the PBC of Cooper. (Taken from the *Journal of Bacteriology*, 71:84, 1956.)

other, a chemical rather than a physical reaction was occurring and that this reaction was an irreversible rather than reversible one. As Cooper, and then Schepartz and Johnson⁷ showed (and as outlined in Fig. 1), when penicillin reacts its molecule does not break down, but only the *B*-lactam ring opens. Consequently, and after it was observed that penicillin would not exert its action upon bacteria if these had been pre-treated with the acetic anhydride, or if penicillin itself had pre-reacted with any substance that would open its *B*-lactam ring, these authors expressed the opinion that what was actually taking place in reactions of penicillin was an acetylation reaction between the PBC and the carbonyl (or the immino) group of the *B*-lactam ring of penicillin.

The basic principle underlying the crucial and leading works of Park and Strominger^{8,9} is the comparison of the normally occurring constituents of the *S. aureus* cell wall with the compounds accumulated within the cell cytoplasm

Compounds identified	Within cell wall	Within cell cytoplasm (uridine nucleotide)
d-Glutamic acid	1	1
l-Lysine	1.06	1
dl-Alanine	3.35	3
Muramic acid	.95	1

Table 1: Comparison of the substances isolated from the normal cell wall of the *S. aureus* and from the cell cytoplasm after the addition of penicillin. The amounts of the substances are represented as the ratios to the amount of d-Glutamic acid. (Taken from *Science*, 125:99, 1957.)

after penicillin had been added to the culture. As the accompanying simplified table shows (Table 1), from both the normal cell wall, and the cytoplasm under penicillin influence, they recovered the same compounds, and what is very significant, in almost equal proportions.

To understand further the theory behind the facts, the hypothesis of Park and Strominger which is most widely accepted at the present time, we will have, first, to recall that the uridine nucleotides, under natural circumstances, within the cell cytoplasm have a dual role of carrying many sugars for various synthetic processes, and of funneling the synthesis and metabolism of all the other pyrimidines. Another concept is that of the basal cell wall component.¹⁰ This term includes the molecules indispensable for the rigid architecture of the bacterial cell wall. Conse-

- A. A hexosamine component:
 - a. glucosamine
 - b. muramic acid
 - c. galactosamine at times
- B. A peptide component:
 - a. alanine (dl)
 - b. glutamic acid (d)
 - c. lysine (l), or DAPA
 - d. glycine, aspartic acid, serine at times
- C. A polysaccharide component, containing not more than four different sugar residues

Table 2: Somewhat simplified list of substances included into the *basal cell wall composition*. (Taken from the *Nature*, 179:841, 1957.)

quently, it is present in both the Gram positive and the Gram negative organisms, but in distinctly different amounts.¹¹ Table 2 shows that several substances, many of them not quite clearly defined as yet, are the parts of the basal components. For our purposes, however, two are of particular interest: the so-called muramic acid (A.b.), and the peptide component (B). In the metabolism of a bacterial cell these substances are not isolated from one another. To the contrary, they function in a chemical combination, and they are, moreover, united with one or more of the uridine nucleotides to form what is known as the "Park compound" by some. Fig. 2 delineates it into three portions, each of which has its own characteristics: 1) a uridine-diphosphate carrier (UDP); 2) the muramic acid, a very unusual compound, and chemically an N-acetyl-glucosamine-lactic-acid ether (this is also known as the N-acetyl-muramic acid or, in abbreviated form, NAMA); and 3) a peptide, composed of the amino acids many of which are of d-configuration, situation

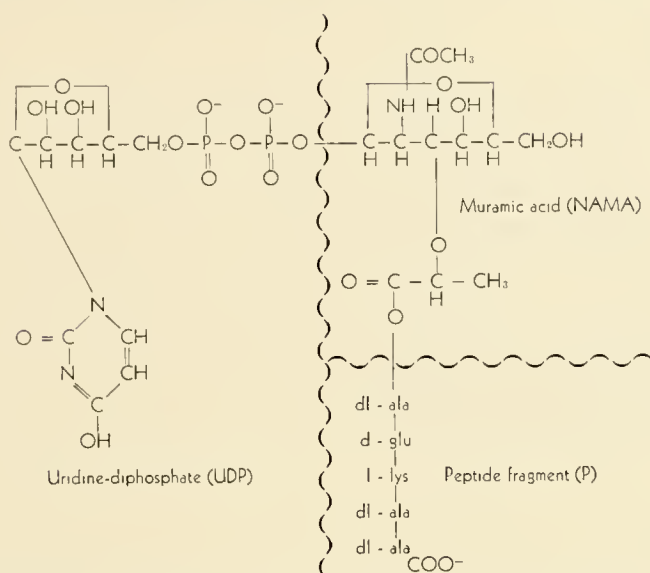


Fig. 2: UDP-NAMA-P complex (Park compound), as detected within the cytoplasm of the bacterial cells. (Taken from the *Science*, 125: 99, 1957.)

not commonly found in nature elsewhere. (The structure of this compound was elucidated by Park and Strominger, Strange, Salton, and Horne.⁸)

Normally, within the cytoplasm of a bacterial cell there are very many substances, and among these are the uridine-diphosphate (UDP), muramic acid (NAMA), and many amino acids present. The UDP, a direct precursor of the ribopolynucleotides, already mentioned as a carrier of many sugars, is able to carry on its shoulders the muramic acid (NAMA), and linked through the latter, five amino acids forming a peptide fragment (P) of the Park compound. The UDP functions as a carrier until it reaches the cell membrane, as outlined in Fig. 3. The membrane appears to be semipermeable, and the carrier is not let out. Thus, if a passage of the NAMA-P fragment (N-acetylmuramic acid-peptide fragment) is to be enabled, the UDP would have to split

off. This is what actually takes place, but at the same instant the NAMA-P fragment is not left alone. It is held that within the cell membrane there are some enzymes, called transglycosylases by Park,⁹ or permeases by Monod.¹⁰ These now accept the NAMA-P fragment from the UDP in order to transfer it to the cell wall precursor (CWP), situated on the outside surface of the membrane. Thus the NAMA-P fragment leaves the transglycosylases (TG) enzymes and combines with the cell wall precursor to form a definite and visible architectural design of the rigid bacterial cell wall.

There are two locations at which it is believed that penicillin may be acting, and these are the inner and the outside surfaces of the cell membrane. In both instances, however, it is held by many^{8, 9, 12} that approximately 1000 molecules of penicillin would have to enter the bacterial cell for its lethal effect to be evident. In case penicillin acts at

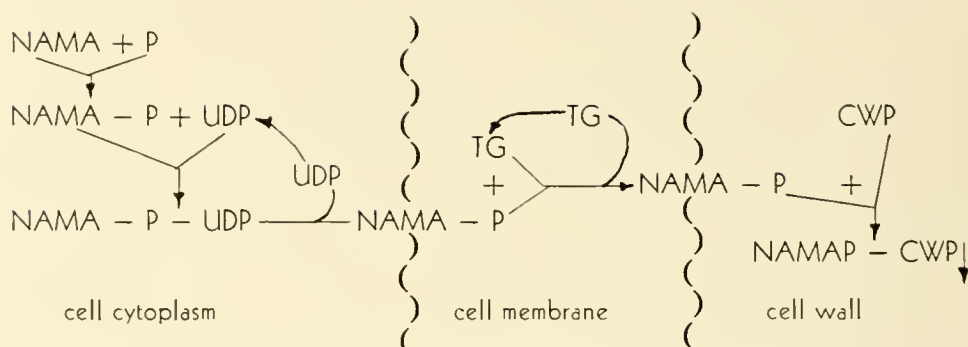


Fig. 3: Schematic representation of the hypothesis of Park and Strominger on the mode of penicillin action. See text for explanation.

the locus of the inner surface of the cell membrane and, thus, prevents the transfer of the NAMA-P fragment from its combination with the UDP and to the TG enzymes, this leads to accumulation of the UDP-NAMA-P, or Park compound, within the cytoplasm. This complex piles up to such a large extent that only phosphates may be responsible for no less than 10% of the dry weight of the organisms.⁹ If penicillin acts, however, at the locus of the outside surface of the cell membrane and prevents the transfer of the NAMA-P fragment from its combination with the TG enzymes and to the CWP, this leads to accumulation of the NAMA-P fragment primarily. This second probability seems to be preferred by penicillin, since the synthesis of the cell wall takes place outside of the bacterial cell membrane.

In both cases, however, the synthesis of the ribonucleic acids is impaired and then blocked, since the uracyl is confined only to the RNA molecules. This, then, leads us to a summary statement of the mode of penicillin action, to prevention of the cell wall synthesis. As it is beautifully shown by Murray *et al.*,¹³ the weakest point of a bacterial cell in regard to penicillin action is the locus of in-

cipient separation of the daughter cells, and once this is achieved by penicillin, the osmotic conditions of the environment have a deleterious effect upon the now naked bacterial cells, and they, then, succumb.

In conclusion it is apparent that a human body is not, generally speaking, affected by penicillin because the body does not possess the cell wall of the bacteria, or the portion of that cell wall, the NAMA-P fragment. In addition it may be interesting to know that d-alanine, as well as muramic acid, have not been discovered as yet anywhere in nature outside of the bacteriological world. The hypothesis presented above is not the only and definitely established series of facts, but experiments leading to it have been continually reproduced. And thus slowly but on the firm grounds becomes evident the mechanism by which acts one of the greatest triumphs in chemotherapy—penicillin.

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OBSTETRICAL CASE REPORT

Prepared by DWIGHT HALPERN, M.D.

Mrs. R. H. was a 28-year-old female, para 3003, blood type A, Rh positive. Blood serologic test for syphilis was negative. Her last menstrual period was March 2, 1960, and the estimated date of confinement was December 9, 1960. Her past obstetrical history was normal, all three previous pregnancies terminating uneventfully with infants weighing between seven and eight pounds. Her past medical history was significant in that she had no operations, major diseases, allergies, and was never previously transfused with blood. Her only hospital admissions were those for delivery of her infants. Her mother and father were alive and well.

The patient presented herself for the first time at the prenatal clinic on June 14, 1960, at which time a diagnosis of an approximate 12 week intrauterine gestation was made. Physical examination at that time was entirely normal. Hemoglobin was 12.2 Gm. The patient was instructed to take a prenatal vitamin supplement daily.

In October, 1960, she returned for the fourth time to the prenatal clinic. Abdominal examination revealed the probable presence of twins. Blood hemoglobin at this time was 10.2 Gm. The patient was given a prescription for oral iron and told to take one tablet three times a day in addition to her vitamins.

She failed to return to the clinic and was next seen on December 1, 1960, when she arrived at the delivery suite in active labor with membranes ruptured.

Physical examination at this time showed a blood pressure of 120/80; pulse of 88; respirations of 20. Examination of the head, eyes, ears, nose, and throat was normal. The lungs were found to be clear to percussion and auscultation. Examination of the heart revealed a regular sinus rhythm. Heart sounds were normal and there was a diffuse, Grade I systolic murmur heard over the entire precordia. Abdominal examination showed the uterus to be 33 cm. above the pubic symphysis. Two distinct, separate fetal heart rates were heard and both were normal. The presenting fetus was a vertex. Rectal examination showed the cervix to be fully effaced, fully dilated with the vertex at +1 station and membranes ruptured.

The patient was then taken immediately to the delivery room where under general anesthesia she was delivered of two full term living male children weighing 5 lb. 10 oz. and 5 lb. 12 oz. over a central episiotomy. Both infants were in the vertex presentation. Estimated blood loss was 300 cc. Examination post partum revealed no hepatosplenomegaly. At this time the hemoglobin was 8.0 Gm. Blood pressure and pulse remained within normal limits and there was no evidence of any intra-abdominal bleeding.

From the Department of Obstetrics and Gynecology, School of Medicine, University of Maryland, Baltimore.

Further hematologic studies showed a hematocrit of 26, a red blood cell count of 2,245,000. Platelet count was 80,000; sickle cell preparation was negative. The patient declared that she conscientiously took her oral iron tablets each day and noticed for the past month the presence of dark tarry stools. Further laboratory studies showed a total bilirubin of 1.1 mg. and a reticulocyte count of 1.2%. The serum iron level was 320 micrograms/100 cc. Accordingly, a bone marrow aspiration was obtained and revealed the presence of megaloblasts in the specimen. A diagnosis was then made of megaloblastic anemia of pregnancy. Initial therapy was folic acid, 15 mg. daily and 500 mg. of Vitamin C daily. One week later the hemoglobin was 10.1 Gm. and in another two weeks had reached a level of 12.3 Gm.

Comment: Megaloblastic anemia of pregnancy is a severe anemia which is rapid in onset and relatively uncommon. It has been noted to have a predilection for multiparous women, occurs most often in the third trimester and in the puerperium and is noted frequently in multiple pregnancies. The disease disappears spontaneously a few months postpartum. The etiology is not absolutely known, but most observers believe that it involves a deficiency in absorption or utilization of folic acid. A lack of Vita-

min C has been suggested as an etiologic agent and therapeutically Vitamin C has been most efficacious. The diagnosis is positively made by the presence of megaloblasts in the bone marrow. Occasionally, megaloblasts may be seen in the buffy coat and rarely in the peripheral blood. Thrombocytopenia and leukopenia are common, although not necessary for the diagnosis. The red blood cells may be macrocytic, normocytic, or microcytic and may have varying types of chromicity. Serum iron levels are usually increased. It is believed that the disease is prevented by adequate intake of Vitamin C and by the use of 1 mg. of folic acid three times a day. Treatment consists of folic acid, 15 to 30 mg. daily with adequate doses of Vitamin C.

This patient first demonstrated a drop in hemoglobin in the seventh month of pregnancy and was given oral iron to correct what was believed to be an iron deficiency anemia. The further severe drop in hemoglobin in the face of iron therapy prompted more elaborate postpartum hematologic studies, including a serum iron level which was definitely increased and refuted the diagnosis of iron deficiency anemia. A bone marrow study then revealed the diagnosis of megaloblastic anemia. The anemia was rapidly corrected with the use of folic acid and Vitamin C.

ABSTRACTS OF ARTICLES BY FACULTY AND ALUMNI

Woodward, Theodore E., M.D., McCrumb, Fred R., Jr., M.D., Carey, T. Nelson, M.D., and Togo, Yasashi, M.D.

Viral and Rickettsial Causes of Cardiac Disease, Including the Coxsackie Virus Etiology of Pericarditis and Myocarditis
Ann. Int. Med., 53:1130 (Dec. 15) 1960

MYOCARDITIS AND PERICARDITIS are important clinically and there are numerous specific microbial agents including recently characterized viruses which cause acute benign pericarditis and attack the myocardium specifically.

Specific examples of myocarditis occurring in two infants and in one adult during the course of Coxsackie disease are presented. Recent reports of this disorder are briefly summarized. Myocarditis associated with influenza, poliomyelitis, Rocky Mountain spotted fever, ratbite fever (*Streptobacillus moniliformis* infection) and rheumatic fever is described. The numerous infective forms of myocarditis are mentioned and the subject is reviewed briefly. It is proposed that those frequent cases of non-valvular heart diseases may have their inception in acute lesions of the myocardium which first appear during the course of some acute infectious processes. Although the clinical manifestations of myocarditis are usually transient and reversible, conceivably the tissue alterations may prepare the site for progressive or de novo developments later. Possible mechanisms are described.

Eight examples of Coxsackie virus pericarditis are reported with clinical descriptions of two cases. The diagnosis is based on serologic findings. Influenza virus, Asian type, was

recovered from the pericardial fluid of a patient whose chronic rheumatic carditis was complicated by the development of serofibrinous pericarditis.

The pertinent recent literature pertaining to Coxsackie virus pericarditis is presented.

Marriott, Henry J. L., M.D., and Weyn, Adrian S., M.D.

Management of the Childbearing Cardiac
Maryland State Medical Journal, January 1961

HEART DISEASE is one of the most important causes of maternal deaths. Hemodynamic changes that occur in normal pregnancy include increase in heart rate, cardiac output, plasma volume, oxygen consumption, and minute ventilatory volume. These add greatly to the cardiac burden, especially when the heart's efficiency is already compromised by disease and when mitral stenosis is the predominant lesion.

Detailed consideration is given to the routines of initial clinical evaluation and follow-up visits. In brief, the aims of medical care are (a) to minimize the unavoidable hemodynamic burdens of the pregnant state and (b) to guard against avoidable stresses. The importance of serial vital capacity measurements is emphasized as an aid in recognizing the earliest signs of increasing pulmonary congestion. The practical aspects of handling pregnant cardiacs who have gone into heart failure are detailed and management of labor and the puerperium is outlined. In competent hands, with conservative medical management, the maternal mortality today should be less than 1 per cent.



Dean's LETTER

MEDICAL SCHOOL SECTION

Dear Members of the Medical Alumni and Friends:

The 1960-61 School year was one marked by steady improvement in the Medical School's education program and the development of the Medical School.

The opening of the Student Union Building, the Health Sciences Library, the completion of the renovation of the operating rooms in University Hospital, and beginning of the initial phases in the redevelopment of the Baltimore Campus of the University are all highlights of the changes taking place.

During the coming year we expect to complete the new basic science building renovation of Howard Hall, and the installation of the metabolic ward laboratories in University Hospital. We will also complete the final phases of the planning of the new out-patient building.

The Student Research Seminar sponsored by Alpha Omega Alpha on May 20, 1961, resulted in the presentation of seven research reports that would do great credit to any scientific society.

We believe our education program not only prepares the student to become an excellent physician in the practice of medicine, but also awakens him to the need to advance medical knowledge and the possibilities of doing so.

We appreciate very much the support the Medical School is getting from its Alumni and Friends. The understanding and assistance for medical education from the University and State has been excellent. We hope for continued progress and improvement.

Sincerely,

WILLIAM S. STONE, M.D.
Dean

School to Sponsor Overseas Research Unit

School of Medicine Granted Funds for Asiatic Research Project in 1962

THE PUBLIC HEALTH SERVICE has announced the award of a grant to the University of Maryland School of Medicine for the purpose of the establishment of a research center in Pakistan. The award has been authorized through Public Law 86-610 which seeks to "advance the international status of the health sciences through cooperative enterprises." An initial grant of \$227,400 has been received and an additional \$400,000 will be forthcoming during the fiscal year 1962. The University of Maryland will concern itself principally with enteric diseases and will begin operations shortly in Lahore, Pakistan.

University of Maryland Surgical Society Organized

WITH a two-day meeting held on April 28-29, and with an initial organizational meeting, the newly formed University of Maryland Surgical Society began its official life. Among those who formed the nucleus for the original organization were: Dr. Robert W. Buxton, Professor of Surgery, Dr. George A. Yeager, Professor of Clinical Surgery, and Drs. Arlie R. Mansberger, Howard B. Mays, Harry C. Hull, C. Parke Scarborough, James G. Arnold, and John D. Young. Dr. Cyrus L. Blanchard, Professor of Otolaryngology, Drs. C. Thomas Flotte, Emil Blair, Robert B. Goldstein, Eugene J. Linberg, Harry C. Boyd, and R. Adams Cowley also participated in the initial program and organizational activities. Scientific displays were presented. An interesting practical program was the order of the day.

It is expected that the society will con-

duct annual scientific sessions in the future.

Hilgenberg Foundation Awards Heart Grant

A GIFT of \$25,000 from the William F. and Caroline Hilgenberg Foundation to the University of Maryland has been received and will be used to support research on heart disease now being conducted in the Department of Surgery at the School of Medicine.

The award, made in memory of Mr. Hilgenberg, former State Banking Commissioner and civic leader who died after a heart attack, was made by Mrs. William F. Hilgenberg, who stated, "The problem of coronary heart disease must be solved in order to preserve the lives and productive efforts of many of the nation's most talented people during the period when they can contribute the most for human betterment. The foundation feels that this is one of the most effective ways to utilize its resources."

In receiving the gift, Dr. Wilson H. Elkins commented on the many public causes to which Mr. Hilgenberg had dedicated himself and expressed the hope that results achieved through research made possible by the gift might carry medical science a step nearer to the solution of the many problems of heart disease.

First Henry J. Walton Lectureship Given by Dr. Pendergrass

DR. EUGENE P. PENDERGRASS, Professor and Head of the Department of Radiology of the University of Pennsylvania School of Medicine, was the first distinguished Henry J. Walton lecturer in radiology. Dr. Pendergrass spoke on "Some Considerations of Silicosis" in the Medical Science Library Auditorium on Thursday, May 5, 1961.

Former School Physician Donates Cajal Portrait

A PORTRAIT of one of Spain's most distinguished physicians and one of the greatest contributors to neurologic science, Dr. Ramón y Cajal, was presented to the Division of Neuropathology by Dr. Alberto Portera-Sanchez, formerly Instructor in Neurology in the School of Medicine and now a practicing neurologic specialist in Madrid, Spain.

Dr. Charles Van Buskirk, Professor of Neurology and a recent visitor to Spain, presented some photographs concerning the life and contributions of Ramón y Cajal and at the same time presided at the acceptance of the portrait.



Dr. Charles Van Buskirk presents the portrait of Dr. Ramón y Cajal to the School of Medicine. Shown together are the Spanish and Maryland flags.

Former Resident in Neurosurgery to Practice in Cleveland

DR. HERBERT BELL, who completed his residency in neurologic surgery at the University Hospital in 1959, has announced the opening of offices at 930 Hanna Building in Cleveland, Ohio. Dr. Bell, who recently completed a tour of duty with the United States Navy, will be associated with Drs. Shannon and Ling in the practice of neurologic surgery.

Lebanese Professor Visits Medical School

DR. ZEKIN SHAKHASHIRI, a member of the faculty of the American University at Beirut and now visiting scientist at the National Institutes of Health, was a recent visitor to the campus. Dr. Shakhshiri's father, Dr. John Shakhshiri, was a member of the Class of 1909 and for many years practiced in Cairo, Egypt prior to his death in 1946. Dr. Shakhshiri was accompanied by his wife and two daughters, one of whom

is a pre-medical student at the University of Maryland.

Warning! Congress Gets Bills to Control Use of Experimental Animals

NATIONAL EVENTS affecting medicine include indirect and far-reaching measures being considered by the Congress of the United States and particularly those affecting the use of experimental animals.

While regulation of the experimental animal might seem remote to the problems of clinical medicine and community health, medical advance begins with the testing of an hypothesis on an experimental animal. From these developments success or failure results and the continuing development of medicine hinges, therefore, quite sharply on the use made of experimental animals.

Until recent years, control of such animals has rested largely in the medical centers or institutes using them. However, public control has been suggested

and a number of bills have been introduced either locally or on a national scale.

A number of years ago, Baltimore was the seat of a controversial bill to limit the use of certain animal species in the experimental departments of the schools of medicines. Fortunately, this bill did not become law.

On a national scale, bills have been introduced in Congress (H. R. 3556 and H. R. 1937), the documents directed toward the control of laboratory experimentation, it is thought by some, by way of controlling the use of experimental animals.

The National Society for Medical Research calls attention to these laws and suggests strongly that physicians familiarize themselves with them and join the National Society for Medical Research in its activities regarding such legislation. Inquiries for additional information may be addressed to the National Society for Medical Research, 920 South Michigan Avenue, Chicago 5, Illinois.

Organization of Biophysics Department Now Complete

PRESIDENT WILSON H. ELKINS and the Board of Regents of the University of Maryland have approved the appointment of Dr. Lorin J. Mullins as Professor and Chairman of the medical school's newly established Department of Biophysics. Dr. Mullins, who has been on duty at the School of Medicine for about a year, was formerly Associate Professor of Biophysics at Purdue University. Establishment of a Department

of Biophysics has been made possible by a grant from the Division of General Medical Sciences of the National Institutes of Health and is the result of an increasing need for instruction in methods and reasoning of physics as applied to problems in the medical sciences. The new department will offer instruction to medical students, graduate students, and post-doctoral fellows in various departments of the professional schools. Medical students will also be encouraged to participate in the department's research problems. Dr. Mullins will continue his current activities into the nature of the processes responsible for generation of nerve impulses and for the generation of muscle contraction.

Alpha Omega Alpha Annual Lecture

DR. ARTHUR KORNBERG, Professor of Biochemistry at Stanford University Medical Center in California, was the 1961 Alpha Omega Alpha lecturer who spoke on "The Chemical Nature of Gene Replication."

Errata

SEVERAL errors have recently been brought to the attention of the Editorial Staff:

Dr. Page Edmunds was born in Leonardtown, Md.

In the announcement of Dr. Richard D. Richards as Professor of Ophthalmology, it was erroneously stated that Dr. Harvey Clapp for many years headed the department. Dr. Clapp's name was Clyde A. Clapp.

Faculty

NOTES

Division of Dermatology

DRS. JAMES K. ATON and WILLIAM R. DUNSEATH have been appointed Fellows in the Division of Dermatology for the year 1961-62. Both are graduates of the University of Maryland.

DR. DANIEL ROBERTS, who has completed three years of training in Dermatology, has prepared an exhibit entitled "Mass Casualties and their Management."

Staff Participates in National Meetings

At the American Academy of Dermatology meeting to be held in Chicago in December, Dr. Mark B. Hollander will present a paper and will participate in a panel discussion. Dr. Hollander is known for his work in hypnosis in relationship to dermatologic therapy. He has also done considerable work with low voltage radiations. At the same meeting Dr. Harry M. Robinson, Jr., will preside at a round table discussion and Dr. Francis A. Ellis will present a clinicopathologic conference at the same meeting, serving as a member of the convention faculty.

DR. RAYMOND C. V. ROBINSON and DR. C. PARKE SCARBOROUGH of the Department of Surgery have prepared a film on "The Surgical Treatment of Epidermolysis Bullosa."

DR. HARRY M. ROBINSON, JR., recently spoke before the Connecticut Academy of General Practice on "The Aging Skin."

DR. HARRY M. ROBINSON, JR., in collaboration with DR. ROY L. KILE of Cincinnati, DR. JOSEPH HITCH of Ral-

eigh, N. C., and DR. RAYMOND C. V. ROBINSON of Baltimore presented a paper before the American Dermatologic Association in Bermuda in June entitled "Bullous Urticaria Pigmentosa." Dr. Harry M. Robinson, Jr., presented another paper in collaboration with Dr. Mark B. Hollander and Dr. Raymond C. V. Robinson entitled "Quantitative Studies of Sebaceous Secretion and Comedone Formation in Acne Vulgaris."

Department of Medicine

DRS. ROBERT T. PARKER and PATRICK B. STOREY were invested as Fellows of the American College of Physicians at the annual meeting of the College held in Miami Beach, Fla. Eligibility for such nomination is limited to specialists in internal medicine who have engaged in the practice of the specialty for at least three years and who have been certified by the American Board of Internal Medicine.

DR. VERNON M. SMITH, Professor of Clinical Medicine and Head of the Department of Medicine at Mercy Hospital, was inducted as a Fellow of the American College of Physicians at its annual convocation in Miami Beach, Fla., on May 3, 1961.

DR. SHELDON GREISMAN was elected to membership in the American Society for Clinical Investigation. His election represents a distinct reflection of honor on the faculty of the School of Medicine as the Society is one of the foremost ranking associations of its type in the United States.

Dr. Greisman is a native of New York City and a product of the New York State and City educational system, receiving his pre-medical training at New York University, graduating from the New York University College of Medi-

cine in 1949. He then served an internship at the Bellevue Hospital in New York and his assistant residencies and residency in medicine at the same institution. Dr. Greisman joined the faculty of the School of Medicine in the Department of Medicine in 1954 being promoted successively from Instructor to Assistant Professor of Medicine, the rank he now holds. In addition, Dr. Greisman serves as Assistant Professor of Physiology in the School of Medicine.

He is a member of Alpha Omega Alpha, the Baltimore City and Maryland State Medical Societies, and is an Associate Member of the New York State Medical Society, the Society of American Bacteriologists, the Society of Experimental Biology and Medicine, and the American Federation for Clinical Research. He received the N.Y.U. citation for the second highest academic grades for four years and the N.Y.U. College of Medicine Award for research on "Vascular Alterations during Blood Studging." He is a diplomate of the American Board of Internal Medicine (1957).

Outstanding among his military contributions was the difficult assignment to the Commission on Hemorrhagic Fever during the Korean conflict 1953-1954. Dr. Greisman contributed to research on the peripheral circulation in patients observed at the Hemorrhagic Fever Center, 48th MASH in Korea.

Dr. Greisman is the author of a large number of publications relating to capillary phenomena and the interrelationship of blood diseases to vascular lesions. He has also performed a considerable amount of investigative work on typhus and Rickettsial diseases.

Department of Pathology

DR. PAUL F. GUERIN of the Department of Pathology and Pathologist at the Franklin Square Hospital in Baltimore serves as pathologist-advisor for the Maryland Society of Medical Technologists and is a member of its executive board.

Department of Pediatrics



DR. SAMUEL P. BESSMAN has been named Professor of Pediatric Research and Associate Professor of Biochemistry in the School of Medicine.

A native of New Jersey and a graduate of the College of William and Mary, Dr. Bessman is a graduate of the Washington University School of Medicine in 1944. He served an internship and assistant residency in pediatrics at the St. Louis Children's Hospital followed by a fellowship in pediatric research. After a period of federal service, he was named Pathologist and Director of Laboratories at the U. S. Marine Hospital in Norfolk, Va., after which he assumed his interest in biochemistry by way of a fellowship under Dr. Heinrich Waelsch at the Neuropsychiatric Institute in New

York beginning in February 1948. Then followed fellowships with Dr. Fritz Lipmann at the Massachusetts General Hospital through July 1953 when he joined the staff of the School of Medicine.

Dr. Bessman is a specialist in biochemistry and has contributed a large number of original papers in this field. Prior to his nomination at the School of Medicine, he was Assistant Clinical Professor of Pediatrics in the George Washington University in Washington. In 1954, he was named Associate Professor of Pediatrics in the School of Medicine. He is a Diplomate of the American Board of Pediatrics and a member of the American Society of Biological Chemists, the Society for Pediatric Research, the American Chemical Society, American Society of Clinical Chemists, and is a Fellow of the Academy of Pediatrics.

THE TENTH ANNUAL PEDIATRIC SEMINAR of the Department of Pediatrics of the School of Medicine was held on Sunday, April 9, 1961 under the direction of Dr. J. Edmund Bradley. Dr. Theodore E. Woodward acted as moderator.

Speakers included: Dr. Albert B. Sabin, distinguished Professor of Research Pediatrics of the University of Cincinnati who spoke on "Immunization with Oral, Live Polio Vaccine."

Dr. Wolf W. Zuelzer of Wayne University College of Medicine in Detroit spoke on "Icterus in Early Life." Dr. Mitchell I. Rubin, Professor of Pediatrics at the University of Buffalo, spoke on the "Basis for Fluid Therapy in the Post-Surgical State in Children." "Abdominal Neoplasms in Infants and Children" was presented as a paper by Dr. John W. Hope, Professor of Clinical

Radiology at the University of Pennsylvania School of Medicine.

Dr. J. EDMUND BRADLEY has been named an Editorial Advisor in Pediatrics to the popular medical journal, *Current Medical Digest*.

Department of Pharmacology

A GRANT of \$17,476 has been awarded to Drs. JOHN C. KRANTZ, JR. and EDWARD B. TRUITT, JR. for pharmacologic studies of hexafluorodiethyl ether (Indoklon). This anesthetic is one of the many fluorinated ethers which have been synthesized in the Department of Pharmacology under Dr. Krantz's direction during the past four or five years. Indoklon was found to produce convulsions in animals. The studies will continue relative to the usefulness of this anesthetic as a substitute for electroshock treatments in certain psychiatric disorders.

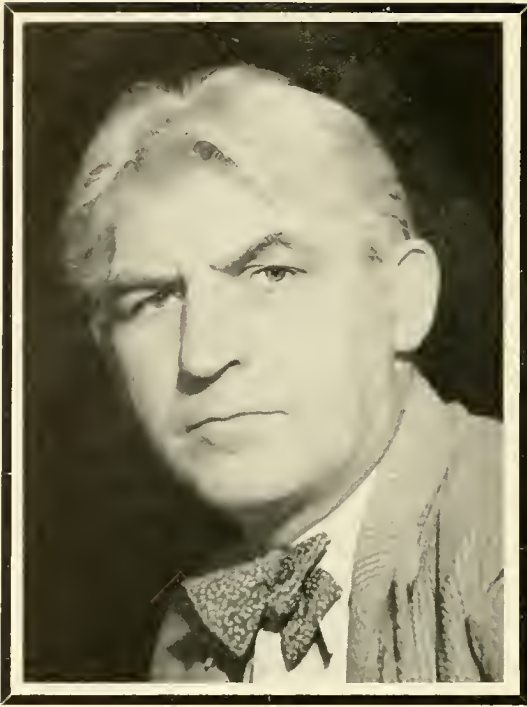
Department of Psychiatry

THE Department of Psychiatry has announced the receipt of a continuation grant of \$14,036 from the National Institute of Mental Health to support its study of the role of the public health nurse in psychiatric care and prevention of mental illness. The project leaders include Dr. Gerald D. Klee, Assistant Professor of Psychiatry, and Dr. Eugene B. Brody, Professor of Psychiatry and Director of the Psychiatric Institute.

An additional grant of \$172,587 from the National Institute of Mental Health was also received and will be used toward the support of graduate and undergraduate training in psychiatry for the ensuing year.

One grant makes it possible for four physicians who formerly practiced in

Continued on page xi



Eduard Uhlenhuth
1885-1961

WHEN Dr. Eduard Uhlenhuth died on May 5, 1961, Anatomy and the University of Maryland lost a most productive, scholarly scientist and colorful teacher.

Eduard Carl Adolf Uhlenhuth was born in Wolkersdorf, Austria on July 19, 1885. He completed his undergraduate education at the University of Vienna and in 1911 received the degree of Doctor of Philosophy from that school. He served as a Research Assistant in Biology at the Biologische Versuchsanstalt from 1911 to 1914.

Dr. Uhlenhuth's career in the United States began in 1914 when he came here as a Fellow at the Rockefeller Institute in New York. In 1916 he was made an Associate at the Institute. He continued his work on tissue culture and transplantation of amphibian eyes and began to work on thyroid physiology and the metamorphosis of amphibians. While

at the Rockefeller Institute he married Elizabeth Martha Baier, and made several field trips with her to Texas caves to collect and study the neotenuous cave salamander *Typhlomolge*. He published several papers on this remarkable amphibian. In 1924, Dr. Uhlenhuth came to Baltimore as a guest of the Anatomy Department of the Johns Hopkins School of Medicine, and the following year accepted a position at the University of Maryland School of Medicine as Associate Professor of Anatomy, advancing to the rank of Professor of Gross Anatomy in 1931. Separate departments of Gross and Microscopic Anatomy were established in 1934 and Dr. Uhlenhuth became Chairman of the Department of Gross Anatomy. He held this position until 1949, when he was appointed Chairman of the combined divisions of Anatomy. Following his retirement in 1955, Dr. Uhlenhuth continued his work at

the School of Medicine as Research Professor of Anatomy until 1957 when he became Emeritus Professor of Anatomy.

Dr. Uhlenhuth's scientific interests and research career were divided into three principal periods. The first or early period included his studies started in Vienna and continued at the Rockefeller Institute. He was the first to demonstrate the feasibility of eye transplantation in amphibia. A second period from 1923 to 1945 was devoted to intensive studies on the anatomy and physiology of the hypophysis and thyroid glands. He and his students discovered the thyrotropic hormone. In the third period, from 1945 until his retirement, Dr. Uhlenhuth directed his efforts to a detailed study of the anatomy of the pelvis, particularly the pelvic fascia, and urogenital apparatus. This work culminated in the publication of his book entitled, *Some Problems in the Anatomy of the Pelvis*, which won the world-wide praise of urologists and gynecologists. He also translated the text of Sobotta's *Atlas of Descriptive Human Anatomy*, and was the American Editor for two editions of this remarkable atlas.

His energetic work and over 100 publications established him as an international authority in his various research areas, but Dr. Uhlenhuth was equally recognized as an outstanding teacher of Gross Anatomy. His more than 3,000 medical and graduate students will have no difficulty recalling Dr. Uhlenhuth's lucid and dynamic lectures, beautifully organized and illustrated, and vigorously presented. They will also be able to remember tense moments experienced in his courses and some of the oft repeated legends about him. These were usually based on his intense devotion to effective

teaching and were related to the high standards which he expected and required from his students.

At the time Dr. Uhlenhuth arrived at the University of Maryland, teaching medical students was regarded as the only obligation of the school, and research received little or no emphasis. In spite of meager facilities, Dr. Uhlenhuth continued his investigations on the experimental anatomy and physiology of the endocrines which led ultimately to his discovery of the thyrotropic hormone of the pituitary gland. His essay on this work won the van Meter Prize awarded by the American Association for the Study of Goiter in 1936. His enthusiasm for research was infectious. Colleagues, graduate students, and medical students joined him as co-workers and co-authors in dozens of excellent publications. Dr. Uhlenhuth took an active role in the founding of the University of Maryland Biological Society. This Society has continued to grow and to fulfill its goal of providing a medium for faculty discussion of scientific problems.

Dr. Uhlenhuth's intense interest in the history of anatomy and in the ancient, classical works of anatomy led him to adopt the hobby of collecting old and rare anatomical books. The generous contributions of friends and alumni enabled him to accumulate a substantial number of rare anatomical classics. This collection is unequalled in departments of anatomy in America, and the Department of Anatomy and the University of Maryland are justly proud of it. His other hobby was building cathedrals with small building blocks, resembling the original stone. He was an authority on cathedral architecture, and made replicas of several well-known European cathedrals.

Dr. Uhlenhuth held memberships in many professional societies, including the American Association for the Advancement of Science, American Association of Anatomists, the Harvey Society, Society for Experimental Biology and Medicine, Society for the Study of Internal Secretions, the Marine Biological Laboratory, and was a past President of the University Biological Society. He was an Honorary Member of the Phi Beta Pi medical fraternity.

Dr. Uhlenhuth is survived by Mrs. Renée Von Bronneck Uhlenhuth, whom he married in Vienna last February; his four brothers, August, Alexander, Victor, and Wilhelm; and he continues to live through his son, Eberhard, who is Assistant Professor of Psychiatry at the Johns Hopkins Medical School, and three grandchildren, Kim, Karen, and Eric Uhlenhuth.

He contributed the major part of his life to the development of the University of Maryland Medical School and his loyalty was deep and unwavering. His devotion to the school, the Department of Anatomy, and to his subject of Anatomy can be gauged from the fact that he carried a will, donating his body to be dissected here at the University of Maryland if he died in this country. Another similar document specified that in case he died in Europe, his skeleton was to be returned here to be placed in the extensive osteological collection that he started. Special efforts will be made to prepare a perfect skeleton and to place it in the collection as a memorial to him. Thus, Dr. Uhlenhuth will continue to be of service to the University of Maryland Medical School and live in the hearts and minds of all the students that he inspired and helped.

Dr. Irving Spear

1877-1961

On February 1, 1961 Dr. Irving Spear, Professor Emeritus of Neurology of the University of Maryland School of Medicine, passed away in his 84th year. His was an active, useful, interesting, and stimulating life.

Born on March 10, 1877 in Alsfeld, Germany, while his parents were visiting their kin abroad, he returned to Baltimore as an infant. His parents were born and raised in this city and his father prospered as a retail shoe merchant, in the western section of the city. Irving Spear attended the elementary public schools in the community and then completed high school at the Baltimore City College. Having decided on medi-

cine as a career, he entered the University of Maryland Medical School, where, quite early, he showed a special interest in neurology and psychiatry. At that time these specialties were combined in one division as Neuropsychiatry. Following graduation in 1900, he interned at the Baltimore City Hospitals, then called the Bay View Hospital, where he furthered his interest in nervous and mental diseases and their treatment under the supervision of Dr. Burkley, the Professor of Neurology at the Johns Hopkins Medical School and Hospital.

Dr. Spear then spent two years in Europe attending the various clinics in Neurology and Psychiatry in the medical

centers of Munich, Berlin, Vienna, and Paris. On his return in 1903 he became superintendent of the Psychiatric Department at the Bay View Hospital and at the same time started his teaching career at the University of Maryland Medical School. He assumed more and more teaching responsibility in the combined department of Neuropsychiatry in the next dozen years, finally in 1915 becoming Professor in this department. In the following year he published the *Manual of Nervous Diseases*, which many of us used as a textbook in our medical student days. With all this activity he was engaged in an increasingly active private practice in his specialty.

With entrance of the United States in World War I, he entered the services of his country and was assigned to Fort McPherson with the rank of Captain and there accomplished excellent work especially in the evaluation and treatment of the extensive number of nerve injuries that occurred in that war. In the fall of 1919 Dr. Spear, then a Major, returned to Baltimore and resumed the teaching responsibility at his alma mater as Professor of the division of Neuropsychiatry, as Chief of the then quite large Out-Patient Department in that field. He continued to head these departments until 1925 when Neurology and Psychiatry were separated into two divisions, the

latter under the professorship of the late Dr. Ross Chapman with Dr. Spear continuing to direct the Neurology Department until his retirement from the medical school in 1947. After his retirement he maintained an active private practice in Neuropsychiatry and was especially interested and active in consultation work in the neurologic medical-legal and traumatic fields until very shortly before his death.

In 1907 Dr. Spear married the former Hortense Hamburger Greenwall of this city, who had already attained a reputation as an artist. Through this marriage Dr. Spear himself developed an extreme interest in art, and his colleagues, friends, and patients recall the many painted prints and antiques covering walls and filling every nook of his office. In addition, his collection showed his interest in historical events of this country, especially of the Revolutionary period. There were no children and with the death of Mrs. Spear in 1948, Dr. Spear continued to live in his apartment surrounded by his books and artistic objects until his death at the age of 84 in the early part of this year.

With his loss the University of Maryland Medical School and the City of Baltimore has indeed lost a true gentleman "of the old school."

PHILIP F. LERNER, M.D. '31

Continued from page vii

other fields of medicine to undertake the full three-year residency in psychiatry. Another provides 12 summer fellowships for medical students, who will not only be given an unusually intensive introduction to clinical psychiatry but may also have occasional opportunity to collaborate in faculty research projects.

Department of Surgery

DR. CARL JELENKO, senior assistant resident in Surgery at the University Hospital, was the recipient of a prize for his paper on "Duodenal Reduplication" presented at the Southern Surgical Conference.

It Happened Twenty-Five Years Ago in the *Bulletin*

GEORGE ENTWISLE, M.D.

IN 1936, the Medical School celebrated its 129th Anniversary; 137 Alumni registered, with the Class of 1921 having the largest number in attendance. The Alumni Association Banquet was addressed by Dr. Harry Friedenwald. President Byrd also spoke—he urged a limited enrollment in the professional schools, being of the opinion that the professions were overcrowded. Plans for a Rowland (Dean of Medical School and Prof. of Obstetrics) Day celebration were announced. Dr. Rowland was the principal speaker at the Pre-Commencement exercises. Gov. Harry Nice made the address at the College Park Commencement and said in part, “. . . we must prevent regimentation at the cost of individual liberty. I trust that you will treat the liberty of this country and your country as the most cherished possession you have.”

Among recently deceased Alumni reported were William H. Arthur, age 80, Class of 1877, a Brig. Gen. of the U. S. Army and the first commanding officer of Walter Reed Hospital; Francis E. Brown, age 69, Class of 1893, the first intern at St. Agnes Hospital (Baltimore) and later the physician in charge of the criminal division at Spring Grove State

Hospital; and Leslie Taylor, age 62, Class of 1895, for a number of years the secretary of the U. of M. Alumni Association in the State of New York.

In the scientific section of the BULLETIN three papers were presented. Drs. Habliston, Aycock, and Shaw reported the results of phrenic nerve surgery in 48 cases. They believed their series tended to confirm the results of others and concluded that phrenic nerve surgery had a definite place in the treatment of selected cases of tuberculosis. Dr. John C. Krantz, Jr., discussed the new United States Pharmacopoeia (U.S.P. XI). Among new substances admitted were ethylene, carbon dioxide, liver extract, ephedrine sulphate, tryparsamide, irradiated ergosterol, diphtheria toxoid, rabies vaccine, and typhoid vaccine. Dr. Harry Teitelbaum made a considerable statistical study of the influence of insulin upon the average mortality age of diabetics in the United States and was able to show that there had been a decrease in the death rate in younger diabetics and that insulin had prolonged the life of the average diabetic.

It was announced in the BULLETIN that the Southern Medical Association would meet in Baltimore in November 1936.

Bulletin, July 1936 (Vol. 21, No. 1).

POSTGRADUATE COMMITTEE SECTION

PATRICK B. STOREY, M.D., *Chairman and Director*

ELIZABETH B. CARROLL, *Executive Secretary*

Postgraduate Office: Room 201

Davidge Hall, 522 West Lombard Street, Baltimore 1, Maryland

The Postgraduate Committee will offer the following programs during the academic year 1961-62.

Basic Electrocardiography

November 2-3-4, 1961. This course will be under the direction of Dr. Leonard Scherlis and will be essentially the same as the course given last year. Limited to 30 students.

Neuropathology for Pathologists

November 13 through 17, 1961. This course will be under the direction of Dr. John A. Wagner. It will be given at the practical level and will include lectures on basic neuropathology, trauma, tumors, infections, and degenerative diseases; surgical neuropathology; the neurological clinicopathological conference; and practical drill in cutting, blocking, staining, and microscopic study of provided specimens. Limited to 12 students.

Endocrinology and Metabolism

December 1-2, 1961. This course will be under the direction of Dr. Thomas B. Connor and will emphasize a basic approach to clinical problems in this field.

Clinical Cardiology

February 1-2-3, 1962. Under the direction of Dr. Leonard Scherlis, this course

will emphasize the presentation of clinical problems in congenital and acquired heart disease, and will include some practical aspects of cardiac catheterization, angiocardiology, sound, and pulse tracings, etc., and will be featured by actual case presentations and clinical exercises.

Hematology

March 8-9, 1962, under the direction of Dr. Milton S. Sacks. This will be limited to 25 students and emphasis will be placed upon practical aspects of diagnosis, mechanisms of derangement, and management.

Advances in Medical Science

January 10-May 16, 1962. This course will be given for the 10th consecutive year. This year's course will consist of a 2-hour lecture on 18 consecutive Wednesdays and will be devoted to progress in the medical sciences.

Clinical Anatomy

January 29-May 21, 1962. This is a 90-hour course with a 1-hour lecture and 2-hour lab session every Monday and Wednesday for 12 weeks.

Full information on all postgraduate courses may be obtained in the office of the Postgraduate Committee.

Have you paid your dues?

**Your Medical Alumni Association exists solely upon
dues payments from its members.**

It needs your support!

**Any suggestions for the improvement of your
Association are always welcome.**

**MEDICAL ALUMNI ASSOCIATION
UNIVERSITY OF MARYLAND**

**Lombard and Greene Streets
Baltimore 1, Md.**

I herewith transmit my annual MEMBERSHIP DUES of \$10.00 to the Medical Alumni Association of the School of Medicine, University of Maryland from May 1, 1960, to April 30, 1961, \$3.00 of which is for a subscription to the BULLETIN of the School of Medicine, University of Maryland, for one year.

Make checks payable to Medical Alumni Association.

Dr. _____

Address _____



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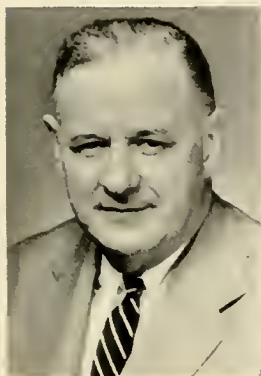
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ALUMNI ASSOCIATION SECTION



President's Letter

Dear Fellow Alumni:

With the tremendous growth and expansion of our medical school and the prospect of increasing our Freshman admissions in 1962 from 100 to 125, your Officers and Board of Directors, realizing their increased responsibilities, have been busy studying various facets of your alumni association, so as to be of greater service to all of our graduates.

It is with pride and honor that I, as a graduate of The University of Maryland Medical School and a member of our alumni team, pledge to do my best to forward our course and beg your continued cooperation.

Sincerely,

FRANK K. MORRIS, M.D.

President

Alumni Day 1961

WITH MORE than 20 active members of the Golden Jubilee Class of 1911 in attendance, June Week officially opened on Thursday, June 8, 1961. This year's festivities were in honor of the Class of 1911 and the graduating Class of 1961.

Following an informal reception and registration, Dr. Arthur Siwinski, President of the Medical Alumni Association, called the annual meeting to order. Two papers were then presented by Dr. Morris J. Nicholson of the Class of 1936 who spoke on "Blood Volume, Its Clinical Significance" and by Dr. David M. Spain, also of the Class of 1936, who delivered a very fine paper, "Coronary Thrombosis, Coronary Atherosclerosis and Ischemic Heart Disease," representing his extensive correlative investigations into the clinical background of a large number of sclerotic hearts.

Dr. Walter D. Wise Honored

The Alumni Honor Award and Gold Key for 1961 went to Dr. Walter D. Wise of the Class of 1906. In presenting this honor to Dr. Wise, Dr. Siwinski noted his many contributions to organized medicine in the State of Maryland, his long and enviable record as a teacher, administrator, and clinical surgeon. This presentation was jointly made by Dr. Siwinski and Dean William S. Stone of the School of Medicine.

Dr. Wise is a native Marylander, born May 18, 1885, Patuxent Beach, Md. He received his preliminary education and training in the private schools of Maryland, was graduated from the College of Physicians and Surgeons in the Class of 1906. He served a rotating internship at the Baltimore City Hospital and was

later Assistant Resident in Surgery at the Mercy Hospital, becoming personal assistant to the late Dr. A. C. Harrison. In 1913 he entered private practice.

During his long career he served as Professor of Clinical Surgery (1932-37) and as Professor of Surgery at the University of Maryland until his statutory retirement in 1956. For many years, Dr. Wise served as Chief Surgeon of the Mercy Hospital in Baltimore and as Chief Surgeon of the South Baltimore General Hospital from 1924-34. During World War II, he served as Medical Director of Selective Service and was Consultant Surgeon to the 3rd Service Command.

Among his many professional activities included the Presidency of the Medical and Chirurgical Faculty, the Presidency of the Medical Alumni Association of the University of Maryland, the secretaryship, vice-presidency, and presidency of the Baltimore City Medical Society. Dr. Wise has been active on the staffs of other Baltimore hospitals including the Union Memorial Hospital, the Hospital for Women of Maryland, and the Johns Hopkins Hospital. He is a member of the American College of Surgeons, American Surgical Association, Southern Surgical Association, the American Association for the Surgery of Trauma, and was a member of the founders' group of the American Board of Surgery. He is the author of some 40 medical papers, most of a surgical nature. An Episcopalian, Dr. Wise is also a member of the Phi Beta Pi Fraternity.

Annual Business Meeting

The annual business meeting of the Medical Alumni Association followed

ALUMNI ASSOCIATION SECTION

the presentation ceremonies honoring Dr. Wise. Dr. William H. Triplett read the necrology. A motion was then made to dispense with the reading of the minutes. This was seconded and unanimously adopted. This was followed by a report of the activities of the Alumni Board of Directors. (The minutes of these meetings have already been published in previous numbers of the BULLETIN.) A treasurer's report was then rendered by Dr. Howard B. Mays. This was accepted. The President then called for the Nominating Committee and its report. It was moved that the report be adopted. This was seconded and unanimously passed. The following officers were elected:

President—DR. FRANK K. MORRIS

President-Elect—DR. GEORGE H. YEAGER

Vice President—DR. JAMES T. MARSH

Vice President—DR. MARION H. GILLIS

Vice President—DR. JOHN McC. WARREN

Secretary—DR. FRANCIS J. BORGES

Treasurer—DR. HOWARD B. MAYS

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Representatives to the General Alumni Council

One year—DR. ERNEST I. CORNBROOKS, JR.

Two years—DR. ARTHUR G. SIWINSKI

The meeting then proceeded to the election of a nominating committee for the year 1962. The following were elected:

DR. J. EMMETT QUEEN

DR. D. McCLELLAND DIXON

DR. WALTER E. KARFELIN

There being no further business, the meeting was adjourned.

The business meeting was followed by the customary luncheon served to some 300 Alumni and Faculty members which was held in the gymnasium of the Psychiatric Institute. In the afternoon were numerous class reunions and informal gatherings. This was followed by the annual banquet held at the Lord Baltimore Hotel. Honored guests included: Mrs. John L. Whitehurst, *Member, Board of Regents, University of Maryland*; Dr. and Mrs. Albin O. Kuhn, *Executive Vice President, University of Maryland*; Dr. and Mrs. William S. Stone, *Dean of the School of Medicine*; Dr. Walter D. Wise, *Professor of Surgery, Emeritus, Recipient, 1961 Medical Alumni Association Honor Award and Gold Key*; Mr. and Mrs. David Brigham, *General Alumni Association, Graduates, Class of 1911, Graduates, Class of 1961*. The Reverend Francis J. Linn, *Rector, St. Edward's Church, Baltimore*, offered the invocation and benediction. More than 20 members of the Golden Jubilee Class of 1911 were awarded their 50-year certificates from President Arthur Siwinski.

Pre-Commencement Festivities

The Class of 1961 assembled on the campus during the afternoon of June 9th. Following the academic procession and the invocation, Dean Stone presented the honors to the graduating class.

Faculty Gold Medal (Summa Cum Laude)

Carlos E. Girod

Certificates of Honor (Magna Cum Laude)

Andres A. Acosta-Otero
Joseph N. Brouillette
John N. Discoyanis
Jay S. Goodman
Robert J. Myerburg

Dr. A. Bradley Gaither Memorial Prize

John R. Marsh

Dr. Leonard M. Hummel Memorial Award

John N. Diacoyanis

Dr. Harry M. Robinson, Sr. Prize

Redwell K. Forbes

The Merck Manual Awards

Carl F. Berner
James J. Cerda

Alpha Omega Alpha

Andres A. Acosta-Otero
Nicholas R. Bachur
Joseph W. Berkow
Joseph N. Brouillette
James J. Cerda
William H. Dudney
Carlos E. Girod
Jay S. Goodman
Robert L. Heymann
Gerald A. Hofkin
Carlos H. Ifarraguerri
Robert J. Myerburg
Rodney L. Ortel
Walter F. Oster

Student Council Keys

Carl F. Berner
Alfred Kronthal

Zack J. Waters, Jr.
Maurice M. Davidson

Dr. McDermott, Pre-Commencement Speaker

The graduating class was then addressed by Dr. Walsh McDermott, chairman of the Department of Public Health and Preventive Medicine at Cornell University. Dr. McDermott, who has been at Cornell University since his internship in 1934, has been Livingston Farrand Professor of Public Health and Chairman of the Department since 1955. He is the holder of the Lasker Award for his studies in the treatment of tuberculosis. (Dr. McDermott's address will appear in the October 1961 BULLETIN.)

June week festivities culminated with the awarding of the diplomas at the commencement exercises held at College Park on Saturday, June 10.

North Carolina Alumni Meet

THE MEDICAL ALUMNI of the University of Maryland residing in North Carolina held a luncheon in conjunction with the annual meeting of the Medical Society of the State of North Carolina. Dr. Patricia Dodd reports that those in attendance included Dr. and Mrs. Charles F. Carroll, Jr. of Concord, N. C.; Dr. Carl N. Patterson of Durham, N. C.; Dr. Albert G. Hahn of Hickory, and Dr. and Mrs. Irl Wentz of Salisbury, N. C. Also in attendance were Dr. W. A. Hoover of Murphy and Dr. J. B. Anderson of Asheville. Dr. Dodd practices in Asheville, N. C.

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WELCOME TO THE CLASS OF 1961

THE SCHOOL OF MEDICINE's newest class, the Class of 1961, is now added officially to the rolls of the Medical Alumni Association. These newly created and, we hope, distinguished medical practitioners, are now on their way. With the culmination of graduation exercises on June 10, the Class dispersed to the internships which will mark the beginning of their medical careers.

Members of the Class of 1961 are enrolled in the following institutions:

APPLETON, JAMES R.

Albany Hospital, New Scotland Ave.,
Albany 8, N. Y.

ARBEGAST, NEIL R.

University Hospital, Baltimore, Md.

BACHUR, NICHOLAS R.

University Hospital, Baltimore, Md.

BANDY, GEORGE E.

U. S. Public Health Service

BATTAILE, JOSEPH C.

South Baltimore General, 1213 Light St.,
Baltimore 30, Md.

BERKOW, JOSEPH W.

Sinai Hospital, Greenspring and Belvedere
Aves., Baltimore, Md.

BERNER, CARL F.

University of Washington Hospitals,
Seattle 5, Wash.

BING, OSCAR H.

V & VI Medical Center, Boston University,
Boston, Mass.

BLUM, MYRON B.

Sinai Hospital, Greenspring and Belvedere
Aves., Baltimore, Md.

BOCCUTI, ANTHONY R.

South Baltimore General, 1213 Light St.,
Baltimore 30, Md.

BRESLIN, THOMAS G.

Rhode Island Hospital, 593 Eddy St.,
Providence 2, R. I.

BROUILLETTE, JOSEPH N.

Henry Ford Hospital, 2799 W. Grand Blvd.,
Detroit 2, Mich.

BROWELL, JOHN N., JR.

U. S. Naval Hospital, Great Lakes, Ill.

BULGER, JAMES C.

Mercy Hospital, Calvert St.,
Baltimore 2, Md.

BUSCHMAN, MILTON H., JR.

South Baltimore General, 1213 Light St.,
Baltimore 30, Md.

CAIN, RONALD L.

Dr. W. H. Groves, Latter Day Saints Hosp.,
325 8th Ave., Salt Lake City 3, Utah

CERDA, JAMES J.

Harrisburg Hospital, Harrisburg, Pa.

CLARK, FRANCIS A., JR.

University Hospital, Baltimore 1, Md.

CLARK, JOHN W.

Mercy Hospital, Calvert St.,
Baltimore 2, Md.

CLARKE, ANGELA W.

Hospital of the Good Samaritan,
1212 Shalto St., Los Angeles 17, Calif.

CLONINGER, KENNETH L.

University Hospital, Baltimore 1, Md.

DAVIDSON, MAURICE M.

Jackson Memorial Hospital, 1700 N. W.
Tenth Ave., Miami 36, Fla.

DELLI PIZZI, GREGORY

South Baltimore General, 1213 Light St.,
Baltimore 30, Md.

DEVENPORT, KARL W.

Huntington Memorial Hosp., 100 Congress
St., Pasadena, Calif.

DIACONYANIS, JOHN N.

University Hospital, Baltimore 1, Md.

DUDNEY, WILLIAM H.

Seaside Memorial Hosp., 1401 Chestnut Ave.,
Long Beach 13, Calif.

FALL, DANIEL J.

Mercy Hospital, Calvert St.,
Baltimore 2, Md.

FAW, BERNADINE C.

South Baltimore General, 1213 Light St.,
Baltimore 30, Md.

FINK, ROBERT A.

University of Illinois, Research and Educa-
tion Hosp., 840 S. Wood St., Chicago 12, Ill.

- FLEMING, WILLIAM R., JR.
Mountainside Hospital, Bay and Highland Ave., Montclair, N. J.
- FORBES, REDWELL K.
Norfolk General Hosp., Raleigh and Calley Ave., Norfolk, Va.
- GLASS, LEONARD W.
University Hospital, Baltimore 1, Md.
- GOODMAN, JAY S.
University Hospital, Baltimore 1, Md.
- GUTBERLET, RONALD L.
Kings County Hospital, 451 Clarkson Ave., Brooklyn 3, N. Y.
- HENCK, SAMUEL H.
Akron General Hospital, 400 Wabash Ave., Akron 7, Ohio
- HEYMANN, ROBERT L.
Tripler Army Hosp., Hawaii
- HOFKIN, GERALD A.
University Hospital, Baltimore 1, Md.
- HOLZ, RICHARD G.
St. Agnes Hospital, Wilkens and Caton Aves., Baltimore 29, Md.
- HOOPER, JAMES L.
Tripler Army Hosp., Hawaii
- KEMPTHORNE, GERALD C.
Cook County Hospitals, 1825 W. Harrison Ave., Chicago 12, Ill.
- KROME, RONALD L.
Detroit Receiving Hosp., 1326 Saint Antoine St., Detroit 26, Mich.
- KRONTHAL, ALFRED
University of Illinois, Research and Education Hosp., 840 S. Wood St., Chicago 12, Ill.
- LANGELUTTIG, HARRY V.
San Diego County General, North End of Front St., San Diego 3, Calif.
- LANKFORD, PHILIP W.
York Hospital, York, Pa.
- LEVENTHAL, MARC S.
Akron General Hosp., 400 Wabash Ave., Akron 7, Ohio
- LIGHT, JOHN P.
University Hospital, Baltimore 1, Md.
- LITRENTA, DAVID E.
York Hospital, York, Pa.
- LUDICKE, ROBERT E.
St. Agnes Hospital, Caton and Wilkens Aves., Baltimore 29, Md.
- MAHONEY, JEROME J.
Seaside Memorial Hospital, 1401 Chestnut Ave., Long Beach 13, Calif.
- MARSH, JOHN R.
University Hospital, Baltimore 1, Md.
- McCARTER, JAMES F.
University Hospital, Baltimore 1, Md.
- McGEOR, THOMAS J., JR.
U. S. Naval Hospital, St. Albans, N. Y.
- MEHL, ROGER L.
Presbyterian-St. Luke's Hospital, 1755 W. Congress Pkwy., Chicago 12, Ill.
- MILLER, GERALD A.
Philadelphia General Hospital, 34th St. and Curie Ave., Philadelphia 4, Pa.
- MORREELS, CHARLES L.
York Hospital, York, Pa.
- MYERBURG, ROBERT J.
University Hospital, Baltimore 1, Md.
- OLDSTONE, MICHAEL A.
University Hospital, Baltimore 1, Md.
- ORTEL, RODNEY L.
University Hospital, Baltimore 1, Md.
- OSTER, WALTER F.
University Hospital, Baltimore 1, Md.
- OTTENRITTER, LEWIS A.
Mercy Hospital, Calvert St., Baltimore 2, Md.
- PAZOUREK, LAWRENCE J.
Mercy Hospital, Calvert St., Baltimore 2, Md.
- PRESSER, CLIFTON C.
Hospital for the Women of Maryland, Lafayette Ave. and John St., Baltimore 17, Md.
- RASMUSSEN, KENNETH E.
Presbyterian Hospital, 19th Avenue and Gilpin St., Denver 18, Colo.
- REEDER, PAUL A., JR.
Grady Mem. Hospital, 80 Butler St., S.E., Atlanta 13, Ga.
- REEVES, JOHN A.
University Hospital, Baltimore 1, Md.
- RITER, EARL F., JR.
Hospital for the Women of Maryland, Lafayette Ave. and John St., Baltimore 17, Md.
- ROSEN, DAVID
San Francisco Hospital, 1001 Petrero Ave., San Francisco 10, Calif.
- SARLES, RICHARD M.
University Hospital, Baltimore 1, Md.
- SCHILLACK, RICHARD F.
U. S. Naval Hospital, St. Albans, N. Y.

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SMALL, MARVIN M.
Henry Ford Hospital, 2799 W. Grand Blvd.,
Detroit 2, Mich.

SONN, THOMAS M.
St. Agnes Hospital, Caton and Wilkens Ave.,
Baltimore 29, Md.

TATE, WAYNE B.
United States Air Force Hospital,
Lackland A.F.B., Texas

TILLEY, LARRY G.
U. S. Public Health Service

URBAN, GEORGE E., JR.
University Hospital, Baltimore 1, Md.

VANN, NINA C.
University Hospital, Baltimore 1, Md.

VITALE, DENNIS E.
U. S. Public Health Service

VITEK, BRANTLEY P.
Madigan General Hospital

WATERS, ZACK J., JR.
Spartanburg General Hospital, 855 North
Church St., Spartanburg, S. C.

WENDLING, ANDREW W.
Jackson Memorial Hosp., 1700 N.W. Tenth
Ave., Miami 36, Fla.

WHITELOCK, LELAND D.
U. S. Public Health Service

WINNACKER, JOHN L.
George Washington Hosp., 901 23rd St.,
N.W., Washington 7, D. C.

WISOTZKEY, HOWARD M.
University Hospital, Baltimore 1, Md.

WOLPERT, ARTHUR
U. S. Public Health Service

YOUNG, ANTHONY J.
St. Agnes Hospital, Wilkens and Caton
Aves., Baltimore 29, Md.

MEET THE EMERITI

Dr. Hugh S. Spencer

By C. GARDNER WARNER, M.D.

DR. HUGH R. SPENCER was born in the Jarrettsville area, Harford County, in 1888. He acquired his basic elementary education in the public schools of the county when the one-room school house was in vogue. The results of this intimate and almost individual basic instruction is still reflected in some of our senior citizens like Dr. Spencer. He matriculated, after high school, at the Baltimore Medical College in about 1906. Maryland General Hospital was the clinical facility of this institution. Dr. Spencer graduated in 1910, about the time this school was amalgamated with the University of Maryland. His interest in laboratory medicine started early and has been constant for 50 years. He came to the Department of Pathology of the University after the consolidation of the schools and was an invaluable inheritance from the B.M.C. Dr. Hirsh was Professor of Pathology at the time, joined later by Dr. Royal Stokes when the College of Physicians and Surgeons became a part of the University of Maryland in 1916.

Dr. Spencer answered the call to service in World War I and served as pathologist in hospitals in France for about 18 months. He returned from the service in 1919, and after the death of Dr. Hirsh, was made full professor. This was at the time the State of Maryland took over the previously private institution, and



the medical school became a part of the greater University of Maryland.

With minimum support and inadequate equipment and resources, he built and maintained a superior department for 35 years. Thousands of students who passed through the University during this time hold him in highest esteem as an honored teacher and personal friend. Some 200 surgical, medical, and residents of Pathology worked under his tutelage. These can especially attest to the excellence of character, implicit honesty, humility, and kindness of this gentleman and scholar. At his retirement from the Medical School in June 1956, a Hugh R. Spencer Day was declared, which was a feeble attempt on the part of the Medical School to honor him for his years of devoted service. The April 1956 number of the BULLETIN was dedicated in his honor, and all the scientific articles were by his previous students.

Dr. Spencer's private life would be classified as modest. He married his childhood sweetheart, Lillian Elliott, about 1916 and lived for many years in the 4100 block Roland Avenue. From 1940, when they gave up their home for apartment living, they have been at the Northway and since 1955 in the Carrollton Apartments at University Parkway, Greenway, and Calvert Street. Although Dr. Spencer and Mrs. Spencer had no

ALUMNI ASSOCIATION SECTION

children of their own, they practically raised a niece and nephew and are now enjoying the progeny of the second and third generations.

Dr. Spencer retired from the University on June 30th, 1956, started on the next day as a part-time associate, with Dr. Walter C. Merkel in the Pathology Department of the Union Memorial Hospital. He spent two years in Surgical Pathology, until a siege of illness on Mrs. Spencer's part interrupted this enjoyable relationship. She has now returned to reasonably good health and

Dr. Spencer to an enjoyment of his retirement years. Although his interests are more sedentary than in the days of coon hunting and fishing, they are reminiscent, happy and enjoyable. Asthma bothers him some on occasion, but this is minimized by the air-conditioned comfort of his apartment. His general health is good. He follows sports closely on TV and enjoys reading and visiting with friends and previous associates. Best wishes for a continued, well earned vacation, Dr. Hugh Spencer!

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Class

NOTES

ELSEWHERE in this edition you will find a "tear out" page, for reporting Alumni Notes to the BULLETIN. This is not an idle gesture.

Your achievements, fellow alumnus, are of interest to your classmates. They constitute a reward to the faculty, are a challenge to the younger physicians, and are an item of prestige for the University. Please cooperate with us by forwarding news of yourself or any alumnus to the BULLETIN. Thank you.

B. M. C. 1894

David Gleason Underwood of 272 Ohio Avenue, Providence, R. I., died October 6, 1960. Dr. Underwood was 90.

P & S 1895

Harry Right Owens of Elkins, W. Va., a veteran of World War I, died October 19, 1960 at the age of 91.

Class of 1899

Joseph Euclide Mercier of Fall River, Mass., died on October 17, 1960 at the age of 85.

Class of 1900

Walton L. Strother of Salem, W. Va., died on December 15, 1960.

P & S 1901

William Edgar McCurry of Hartwell, Ga., and onetime member of the House of Delegates of the American Medical Association, died in Pineworth Hospital, Macon, Ga., October 28, 1960 at the age of 83.

Class of 1902

Charles Edward Snyder died on May 16, 1961 at the Memorial Hospital in Easton, Md.

Dr. Snyder had practiced medicine in Stevensville on Kent Island, Md., for the past 58 years and was active until a recent injury forced his hospitalization.

A native of Centreville, Md., Dr. Snyder lived his entire life in Queen Anne's County, Md. At one time he was president of the Stevensville Bank and was a member of the Queen Anne's County Medical Association.

B. M. C. 1907

Albert Ernest Perron of Fall River, Mass., died October 10, 1960. Dr. Perron was 76.

Class of 1909

H. W. Smeltzer, prominent Washington County (Virginia) physician, died on February 1 in Johnston Memorial Hospital, Abingdon, Va.

A native of Washington County, he attended the Abingdon Male Academy and graduated from the School of Medicine in 1909. He returned to his native Virginia and there maintained offices and practiced medicine in Abingdon and Greendale for 52 years. He was a member of the American Medical Association, the Medical Society of Virginia, the Southwest Virginia Medical Association, and was a member of the Attending Staff of the George Ben Johnston Memorial Hospital.

In 1949 he attended the 40th reunion of his class and in 1959 received the 50th year honorary certificate from the Medical Alumni Association.

Dr. Smeltzer's son, Dr. Charles C. Smeltzer, practices in Knoxville, Tenn.

B. M. C. 1910

Herbert Clark Kincaid of the Tower Building, Washington, D. C., died recently.

P & S 1912

Edward P. Smith, Class of 1912, College of Physicians and Surgeons, died at Scott Air Base, Illinois. He was a native of Punxsutawney, Pa. After graduation Dr. Smith trained in Obstetrics and Gynecology at Mercy Hospital, later becoming medical superintendent and obstetrician-in-chief. Dr. Smith achieved national recognition in 1931 when he separated Siamese twins by surgical operation.

In addition to his medical practice and his membership in numerous medical organizations, he was active in civic affairs and had numerous personal friends in Baltimore. He was an Army Medical Officer during World War I. He was a former secretary of Baltimore City Medical Society and a member of the house of delegates of the Medical and Surgical Faculty of Maryland. He was also an assistant professor of Gynecology at The University of Maryland. Outside his medical practice, he belonged to the Knights of Columbus and the Rotary Club. He was a director of the Royal Oak Perpetual Building Association and of Dolan's Aid Children's Home. He also belonged to the Hibernian Society.

He is survived by his wife, Mrs. Loretta Muth Smith; a son, Dr. Edward P. Smith, Jr., of Scott Air Force Base, Illinois, and a sister, Miss Margaret Smith. There are three grandchildren. Though he was not in active practice recently, his kindness and good example and deep religious spirit will continue to be an inspiration to us who follow him.

B. M. C. 1913

Boylston D. Smith of Amherstdale, W. Va., died October 29, 1960, aged 70.

Class of 1913

Charles Reid Edwards, Professor of Surgery Emeritus at the School of Medicine, was honored by a testimonial dinner held on April 27. Surgical residents who had received their training under Dr. Edwards came from 18 states to pay him honor.

The dinner, held in conjunction with the annual meeting of the newly organized University of Maryland Surgical Society, honored Dr. Edwards for his long tenure as a teacher, preceptor, and a clinical surgeon.

Dr. George A. Yeager, Professor of Clinical Surgery at the University of Maryland, was the toastmaster. Dr. William H. Toulson, Professor Emeritus of Surgery, reviewed Dr. Edwards' career.

Because of Dr. Edwards' special interest in the graduate training of young physicians, an endowment fund was established in his name during the year 1960. This endowment fund will be used to support clinical research in the School of Medicine.

A native of West Virginia, Dr. Edwards spent his entire medical career in the City of Baltimore, except for a few years spent on active duty in World War I. Following the retirement of the late Dr. Arthur M. Shipley in 1948, Dr. Edwards headed the Department of Surgery, being succeeded by Dr. Robert W. Buxton in 1955. In 1957 Dr. Edwards received the Medical Alumni Association's honor award and gold key.

Class of 1915

Harry L. Rogers has announced the removal of his office to 529 North Charles Street, Baltimore, Md.

Class of 1920

J. Morris Reese was presented the annual alumni award for 1961 by the Beta Alpha Chapter of Nu Sigma Nu Fraternity. The award, given in recognition of outstanding contribution to fraternity life and particularly with relationship to Beta Alpha Chapter, was presented at the annual reception for faculty and alumni held on May 13 at the fraternity house, 922 St. Paul Street. Dr. Reese was the honored guest.

Class of 1926

Emanuel Alfred Manginelli of New York City died on October 9, 1960 at the age of 60.

Class of 1927

Frank K. Morris has announced the removal of his office for the practice of gynecology to 1120 St. Paul Street, Baltimore, Md.

Class of 1928

Herman Chor (Commander, Medical Corps, U.S.N.R.), who resided at 700 N. Michigan Boulevard in Chicago, died recently.

Class of 1929

Jacob H. Conn presented the first Smith, Kline and French Laboratories lectureship entitled "The Interrelationships between Pain and Anxiety" at the 12th Annual Meeting of the American Society of Psychosomatic Dentistry and Medicine held on March 11.

Class of 1932

John C. Dumler, who has been active in the American College of Obstetrics and Gynecology, was recently the moderator of a conference on "Sarcoma of the Uterus" held in conjunction with the annual meeting of the College. Dr. Dum-

ler is Assistant Professor of Gynecology at the School of Medicine and Chief of the Gynecologic Service at the St. Agnes Hospital in Baltimore.

Class of 1932

Arthur Nachlas of 4221 16th Street, N.W. in Washington, D. C., died February 12, 1961.

Class of 1941

Raymond K. Thompson has been elected Secretary of the Neurosurgical Society of America.

Class of 1942

Morton L. Hammond was recently certified in the sub-specialty of allergy by the American Board of Allergy. Dr. Hammond practices at 350 N.E. 15th Street at Venetian Causeway in Miami, Fla.

Class of 1944

James A. Doukas has announced the removal of his office to 529 North Charles Street, Baltimore I, Md.

Class of 1944

Albert I. Rubenstone is a member of the Department of Pathology of the Michael Reese Hospital in Chicago, Ill.

Class of 1947

Francis K. Machata has announced the removal of his office to 1160 Norton Street, Rochester 21, N. Y., for the practice of internal medicine.

Class of 1952

Joseph A. Knell, Jr., has announced the opening of his office in partnership with Dr. Christian F. Richter (1941) at 1001 St. Paul Street in Baltimore, Md. Dr. Knell has been recently certified by the American Board of Obstetrics and Gynecology.

ALUMNI ASSOCIATION SECTION

Class of 1953

J. Patrick Gillotte has announced the removal of his offices and main laboratory to 1505 North 7th Street, Terre Haute, Ind.

Dr. Gillotte, who completed his residency in pathology at the School of Medicine, is associated with Drs. Blum and Weinbaum in partnership as the Terre Haute Medical Laboratory.

Class of 1956

John F. Nowell is completing his residency in ophthalmology at the Louisiana State University Medical Center in New Orleans. Dr. Nowell recently participated in a special course in ophthalmic pathology offered at the Armed

Forces Institute of Pathology in Washington, D. C.

Class of 1958

Robert B. J. Mulvaney has been appointed chairman of the 1962 Essex County (New Jersey) Health Fair which will be sponsored by the Essex County Interprofessional Health Council at South Mountain Arena in West Orange, N. J. This important event will be held from June 5-9, 1962. Dr. Mulvaney, who practices at 25 Longfellow Avenue in Newark, has also been appointed Physician to the Essex County Penitentiary in Caldwell, N. J., assuming responsibility for the medical care of some 600 inmates.



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A Note on Adenosine and Adenylyate
Deaminases in Brain and Quadriceps Muscle
of the Rat in Noble-Collip Drum Shock

H. NINOMIYA, M.D., R.W. BUXTON, M.D., and M. MICHAELIS, PH.D.

RESPIRATORY ENZYMES in liver and brain are impaired in shock.^{1,2} Some of the partially inhibited enzymes require co-enzymes I and II. It is possible that some of this inhibition could be due to a decrease in co-enzymes since such a decrease in several organs of the dog including the brain had been reported in hemorrhagic shock.³ Enzymes similar to muscle adenylic acid deaminase can convert co-enzyme I to its deamino-analog,⁴ and such a reaction may be envisioned as contributing to a decrease of the co-enzyme content of tissues in shock.

To test this possibility adenosine deaminase and adenylic acid deaminase were assayed in brain and muscle of shocked rats to determine whether their activities would be increased to a degree sufficient to contribute to any deficiency of co-factors containing adenosine or adenylic acid.

Methods

Young adult male Wistar rats weighing 200-300 Gm. were exposed to 500 turns in the Noble-Collip drum.⁵ In some cases the animals were left unfettered so that they could jump within the drum and thus avoid or diminish the impact of the prisms inside the drum. All survivors were decapitated two hours post-drumming. The brains were excised and homogenized in Potter-Elvehjem homogenizers with Teflon pestles. The quadriceps muscle preparation was made with a de Virtio homogenizer. The suspension medium was a buffer consisting of 0.01N citric acid and 0.01N sodium hydroxide adjusted potentiometrically to the respective optima.

Succinate buffer has been recommended for the assay of adenylic acid deaminase in rabbit tissues.⁶ We found that with rat tissues succinate buffer yielded only half the activity for adenylic acid deaminase when compared with the citrate medium. Optimal pH values for the 4 deaminases were:

	ADENOSINE	ADENYLIC ACID
Brain	6.8	6.5
Muscle	6.8	6.2

From the Division of Experimental Surgery, School of Medicine, University of Maryland, Baltimore, Maryland.

Supported by NIH Grant No. H2937 (C3) and Abbott and Wallace Laboratories grants.

The homogenates were prepared in 20-fold dilution (w/v). Their protein content was determined with the Biuret method. Adenosine and adenylic acid were determined with the Beckman DU Spectrophotometer at 257.5 mμ and 265 mμ, respectively. The assay mixture was 1.0 ml. of 1.4M substrate in 1.5 ml. of buffer, 1.4 ml. of sodium chloride, .85% and finally .1 ml. of homogenate, in a quartz cell. Without sodium chloride the enzymes lose their strength quite rapidly. Homogenates must not be allowed to age more than two hours at 0° lest their activities should decline precipitously. These conditions are critical. Our method is a modification of the procedure introduced by Kalckar.⁷

Results

Preliminary observations were made by measuring the ratio adenosine/inosine in deproteinized supernates of brain tissue homogenates from control and shocked animals, at 257.5 and 244 mμ respectively. Table 1 indicates a small

Table 1—Ratio of Adenosine/Inosine in Rat Brain, Control and Drummed (Taped)

No. of Observations	Control	Taped
13		
Ratio Ad/In.	0.45	0.50
P > 0.05		

but persistent difference for the ratio of adenosine/inosine when brain tissues from control and traumatized animals were compared. However, the differences between data for control and trauma are statistically not significant. Therefore the specific activities of adenosine and adenylylate deaminases were determined. Tables 2 and 3 show that both adenosine and adenylylate deaminases are decreased in brain after shock. Unfettered rats were also used for the determination of adeny-

late deaminase. Brain and muscle enzymes were assayed in all cases.

Table 2—Adenosine Deaminase in Normal and Drummed Rats' Brain and Muscle Homogenates mg/0.1 ml.

	Control		Taped	
	Brain	Muscle	Brain	Muscle
No. of Observations				
7				
Specific Activities	9.2	5.50	3.0	9.6
P Brain < 0.01				
P Muscle < 0.02				

Table 3—Adenylylate Deaminase in Normal and Drummed Rats' Brain and Muscle Homogenates

	Control		Taped		Not Taped	
	Brain	Muscle	Brain	Muscle	Brain	Muscle
No. of Observations	17	16	8	8	8	8
Specific Activities	11.4	30.8	6.7*	47.0**	10.1*	53.3**

* P < 0.01

** P < 0.05

Discussion

It is evident that both deaminases occur in brain and muscle of the rat. This observation differs from the results reported by Greenstein *et al.*⁸ who stated that adenylylate deaminase was absent from brain and muscle of the rat, but was present in its kidney, liver, pancreas, and spleen. Adenosine deaminase has, to our knowledge, not yet been reported in the rat* and is accordingly not mentioned in the tabulated review of distribution of enzymes of animal tissues by Dixon and Webb.⁹

The relative magnitude of these enzymes in brain and muscle of normal animals have been computed partly from

* After this paper had been submitted for publication, the presence of an adenosine deaminase was reported in the rat by BRADY, T. G. and O'DONOVAN, C. T.; Survey of the Distribution and Nature of Mammalian Adenosine Deaminases, *Biochem. J.*, 80:17T. 1961.

published data in the rabbit⁶ and are compared with our data for the rat:

Substrate	Ratio	
	Skeletal muscle/brain	
	Rabbit	Rat
Adenosine	0.1:1	0.6:1
Adenylic Acid	100:1	2.7:1

The differences of relative magnitude between these organs appears to be larger for adenosine deaminase in the rat, and larger for adenylic acid deaminase in the rabbit.

Tables 2 and 3 show that both adenosine and adenylic deaminases are decreased in brain after shock. Adenylic deaminase was also determined in brain and muscle of unfettered rats after tumbling. There is a difference in the response of enzymes to trauma according to their origin. Brain enzymes are decreased in fettered animals but are not statistically significantly changed in unfettered animals. Contrariwise, the muscle enzymes are increased for both substrates. Further, the adenylic acid deaminase shows a higher activity in unfettered rats when compared with fettered ones.

Adenosine deaminase and adenylic acid deaminase are increased in mechanically traumatized muscle. This was seen for adenylic acid by Embden *et al.*¹⁰ Adenosine deaminase was reported increased in the muscle of dogs in tourniquet shock, in the fluid released from the muscle after the tourniquet had been removed.¹¹ Our observation that adenylic deaminase shows increased activity in unfettered rats which display strong muscular activity during drumming would agree with the well-known fact that adenylic acid is converted to inosinic acid during muscle contraction. Our result would indicate that adenylic acid deaminase is an adaptive enzyme, its specific activity increasing when great muscular exertion occurs. On the other

hand, the decrease of the deaminases seen in the brains of shock animals could not contribute to a co-enzyme deficiency in shock in that organ.

Summary

Conditions for the assay of adenosine and adenylic deaminases in brain and muscle of rats are described. The presence of adenylic deaminase in brain and muscle of the rat was demonstrated as well as the occurrence of adenosine deaminase in that animal. In shock the enzymes are decreased in the brain and increased in muscle. There is an even greater increase of muscle adenylic acid in rats made to exercise in the Noble-Collip drum which would indicate that adenylic acid deaminase is an adaptive enzyme.

We wish to express our thanks to Dr. Mathew L. Tayback for the statistical analysis, and to Dr. Samuel P. Bessman for his discussion of the manuscript.

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The Neurotoxic Effects of Phenothiazine Compounds

R. M. N. CROSBY, M.D.

SHORTLY after the introduction of the ataractic or mood modifying drugs which contained a phenothiazine nucleus, it was found that these compounds had potent antiemetic activity. Because of this they have been used extensively in the treatment of various gastrointestinal disorders in children and adults, as well as for their primarily intended purpose. Since the introduction of these compounds there have been reports of neurotoxic side reactions occurring with irregular frequency. Originally, the majority of these reactions were associated with the use of these drugs in the treatment of psychic disorders, and in most cases followed protracted use of large doses. More recently, with the extensive use of the phenothiazine-containing compounds as antiemetics, instances of neurotoxic side reactions have been noted at much smaller dosage levels and on short-term therapy. However, the descriptions of these side reactions are inadequate for clinical recognition and some of the facts associated with the occurrence of these side effects have not received proper dissemination.

The neurotoxic reactions have been described as "extrapyramidal syndrome," "dystonic reaction," "abnormal neuromuscular activity," "severe motility disturbance" and many others. The reactions observed by us fall into two groups.

1. Though conscious, the patient has similar repetitive bouts which are char-

acterized by a decerebrate position of the body and extremities, forced head turning with tonic facial grimacing, often with athetoid motion of the extremities, especially the upper, interrupting the decerebrate posture. The symptoms closely resemble those in a patient with an intermittent dystonia musculorum deformans. In the interval between bouts, motion of the tongue and face are frequently tonic and bizarre. At this point the patient can often be found to have cogwheel rigidity, hyperreflexia, ankle clonus, intention tremor, and abnormal plantar toe signs. In some, the antigravity position of the back and lower extremities is constant. The patient is in contact and will often try to answer questions. Bouts of this described activity may occur as often as every two to three minutes or may be separated by several hours. The patient is generally incapacitated during the interval. One gets the impression, especially in young children, that these bouts may be stimulated by fear, sudden noise, apprehension, or excitement.

2. Some patients have true, classic convulsive seizures. These seizures are generalized somatic motor attacks which have either or both clonic and tonic activity and are followed by the usual postictal state.

Whether or not the first type should be classified as a convulsive seizure is open to question. Thus, for example, an 11-year-old boy with a unilateral dystonic type of reaction displayed a hemiparesis of the appropriate side with hyperreflexia

From Department of Surgery, Division of Neurosurgery, and Department of Pediatrics, School of Medicine, University of Maryland, Baltimore, Maryland.

and an abnormal planter toe sign for about 12 hours after cessation of the dystonia.

Our experience has been only with those cases in which side reactions occurred; therefore, no statement of incidence can be made. The number of cases include three adults and nine children varying from one-and-a-half to eighteen years. Several examples of such cases are cited.

Both types of side reactions, such as convulsive and dystonic, were noted with most of the five drugs used.

Case 1. An 11-year-old white male was given perphenazine in treatment for vomiting associated with a gastrointestinal infection. The dosage was 5 mg. intramuscularly, followed eight hours later by an 8 mg. delayed-absorption tablet. This child suffered seven major convulsive seizures in a period of three hours. For the next hour he had migratory focal motor seizures in status, reminiscent of lead encephalopathy. After control of this state with intravenous barbiturates he was found to have cogwheel phenomena. The first attack occurred 18 hours after the intramuscular injection. There was no residual after 48 hours.

Case 2. A three-year-old white male had a gastrointestinal infection which produced vomiting, necessitating the use of perphenazine. This was given in 4 mg. suppositories, three of these six hours apart. This child had the dystonic type of reaction which began 20 hours after the first suppository and lasted 48 hours. After 72 hours he was completely free of all symptoms.

Case 3. An 18-year-old white female with gastrointestinal infection whose vomiting was treated with triflupromazine was given one intramuscular injection of 10 mg. She had a dystonic type of reaction which occurred 12 hours after the first, and only dose, of this agent.

Case 4. An 11-year-old white male who had an upper respiratory infection which was associated with persistent vomiting for three days was given three doses of an experimental compound containing a phenothiazine nucleus. These three doses were given in accordance with manufacturer's instructions. The boy had a unilateral dystonic type of reaction which

was followed by a residual hemiparesis on the involved side. He was given intramuscular phenobarbital to control the dystonia. The dystonic reaction began 24 hours after the first dose of the drug and lasted for about 12 hours. The hemiparesis lasted 12 hours after the cessation of the dystonia.

Case 5. A five-year-old white female was given prochlorperazine for treatment of persistent vomiting associated with gastrointestinal infection. This child was given 5 mg. doses every six hours for six doses. In conjunction with this the child received 15 mg. of phenobarbital by mouth along with the prochlorperazine. Thirty-six hours after the initial dose the child displayed dystonic type of reaction which lasted for 24 hours.

Three adults each received a single dose of a phenothiazine-containing compound all within the recommended dosage level either as pre- or post-operative medication. All patients had generalized convulsive seizures within 17 to 18 hours after the administration of a single dose of the suspect compound. In none of these patients were there any permanent residua. In none of the 12 cases was there a history of previous neurologic disorder. Following these episodes all patients were free of abnormalities on neurologic examination. Where performed, the electroencephalogram was normal.

Discussion

Previous papers on the subject described only the dystonic type of reaction. In a recent paper Cohan¹ refers to "convulsive seizures" but describes only the extrapyramidal syndrome which has not been proved as yet to be "convulsive." Five of the 12 cases which form the basis of this report had classic generalized major motor convulsive seizures.

It has been our experience that neurotoxic effects are seen with many phenothiazine-containing compounds. The different side chains do not appear to increase the side effects; in fact, dystonic effects were seen in a child taking a phenothiazine-containing cough remedy.

The only specificity appears to be the phenothiazine nucleus.

In the few published accounts in which the details of dosage have been given in relation to the appearance of side effects, little attention has been paid to the temporal relationship. Goldsmith² was the first to mention that there is a delay between the administration of the drug and the appearance of the neurotoxic reaction. It has been our experience that the side reaction occurred at least 12 hours after the initial or only dose of the suspect compound. This may be confirmed in all previous papers in which a detailed schedule of medication is given. Therefore, in the absence of permanent residua, the delayed onset of the neurotoxic effect of these compounds must indicate that the reaction is caused by a metabolite rather than the original compound. The specific metabolism of the phenothiazine-containing compounds is at the present time unknown.

Does the dose make any difference? From the accumulating literature related to psychiatric experience with these drugs, it would appear that the side effects occur only with large doses and can be made to disappear when the dose is reduced. In the pediatric literature and in the author's experience, side reactions to phenothiazine compounds seem to represent individual sensitivity and have little relationship to dosage. Cleveland and Smith³ reported four instances of dystonia following the use of prochlorperazine; in three of these the dose was unquestionably within very narrow limits. In one of the three cases the result was reproduced a second time in the same patient. Berry⁴ used perphenazine and had two instances of side reactions with three 4-mg. doses in each patient. In our group of cases side effects occurred following a single dose of two different compounds in two children and

following a single dose of two different agents in all three adults. It must be remembered that the patients who have been seen by us were all physically ill, and in quite a different state from the ambulatory psychiatric patient.

In our experience the neurotoxic reactions to phenothiazine-containing compounds are severe enough to warrant hospitalization of the affected patient. Because of the severity of the reaction and its capricious occurrence, phenothiazine compounds should be used with caution as antiemetics; and particularly in children. Perhaps the newer non-phenothiazine antiemetics such as trimethobenzamide* should be used exclusively since they have been found not to produce neurotoxic effects.

Summary

1. Neurotoxic reactions occur with the use of phenothiazine-containing compounds even when used as antiemetics.

2. It is suggested that the neurotoxic effect of these compounds is related to individual sensitivity and not the dose, and that the effect is produced by a metabolite rather than by the original compound.

3. Although not permanent, these neurotoxic effects are severe enough to justify some hesitancy about using these compounds if others are available.

* Tigan, trademark of Hoffmann-La Roche, Inc., Nutley, New Jersey.

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Congenital Agenesis of the Pulmonary Valve

WILLIAM A. SINTON, JR., M.D.

AGENESIS of the pulmonary valve with associated interventricular septal defect has been reported in three cases.¹⁻⁴ Of these patients, two were adults aged 42 and 36 years, and the third was an infant who died at nine weeks of age. A fourth example of agenesis of the pulmonary valve, but without associated interventricular septal defect, was found in a 14-year-old boy during cardiac surgery for what pre-operatively was thought to be pulmonic stenosis.³

Recently at this hospital an infant was observed who, at postmortem examination, was found to have agenesis of the pulmonary valve and a small interventricular septal defect. This patient is presented, and the clinical and postmortem observations in this and the previously reported cases will be discussed.

Case Presentation

S.F., a three-months-old Negro male was brought to the emergency room of this hospital on February 18, 1960, because of labored respirations.

The infant was born at another hospital of a 25-year-old mother following an uncomplicated, full term pregnancy, normal labor, and uncontrolled, unsterile, vaginal delivery in bed. The immediate condition at birth was described as good but physical examination revealed a harsh, grade III systolic murmur over the entire precordium. He remained in that hospital eight days during which time two episodes of cyanosis were noted, one occurring during circumcision. However, he ate well and regained his birthweight of five pounds-eight ounces after six days.

Roentgenograms of the chest were made during this first hospital stay and were re-

ported to be normal. An electrocardiogram made at two days of age was reported as normal except for sinus tachycardia. He was discharged to his parents on the eighth hospital day.

According to the mother, who was felt to be a reliable historian, the baby did well from the time of discharge with the exception that his respirations had appeared unusual to her. She had noticed that his chest and abdomen moved in a see-saw manner. Despite this fact he did well at home for the first three months of life. However, one week prior to admission he developed a cough and mucoid discharge from the nose. The cough gradually became more severe and respirations became progressively more labored until at the time of admission he was wheezing and grunting.

Despite these symptoms his appetite had remained good and there was no fever. Other members of the patient's family were well and the family history revealed no significant illnesses.

Physical Examination. The patient was in acute respiratory distress, and appeared small for his age.

T 99.6 (R) P 170 R 55 B.P. 130 systolic (flush)

Measurements. Head 14 inches; chest 14 inches; length 22 inches; weight 9 pounds 4 ounces (all less than the 3rd percentile for males of 3 months).

HEENT: No abnormalities; no cyanosis of mucous membranes.

Neck: Supple without detectable adenopathy, venous distension or abnormal masses.

Chest: Symmetrical with a moderate degree of subcostal retraction. The percussion note was resonant throughout. Inspiratory and expiratory wheezes were heard over both lung fields. A few moist inspiratory rales were detected in the right upper lobe posteriorly and along the left lateral chest wall.

Heart: The heart was not enlarged to percussion and no thrill could be felt. A grade IV harsh systolic murmur was heard best at

From Department of Pediatrics, University of Maryland Hospital, Baltimore 1, Maryland.



Fig. 1. P. A. X-ray of chest showing "hilar mass."



Fig. 11. Lateral X-ray of chest showing "hilar mass."

the left 2-4th interspace. P2 was not accentuated.

Abdomen: Soft, scaphoid, and non tender. The liver was felt 3 cms. below the right costal margin. The spleen tip was just barely palpable.

Musculoskeletal: No clubbing. Peripheral pulses were full and there were no bony abnormalities.

Further physical examination was within normal limits.

Clinical Course. On admission, x-rays of the chest were made and the child was placed in a tent with oxygen and mist. Because of physical findings suggestive of congestive failure and pneumonia, digitalization with Lanoxin was begun and penicillin and chloromycetin were given. The x-rays revealed evidence of a pneumonitis in the right upper lobe and a mass in the left hilar area. An electrocardiogram revealed evidence of right ventricular hypertrophy and strain.

During the first week in the hospital, the patient's general condition remained satisfactory. Oral intake was adequate, and he was afebrile. With digitalization the heart rate slowed to normal, but respirations remained noisy and labored. On the fourth hospital day an x-ray revealed partial atelectasis of the upper segments of the left upper lobe with compensatory emphysema. The large mass

noted in the left hilar area was seen again and review of the films made elsewhere during the newborn period revealed that the mass was present at that time. A repeat x-ray 24 hours later revealed almost complete reexpansion of the atelectatic segment. On the seventh hospital day bronchoscopic examination revealed a narrowing of the distal portion of the left main stem bronchus. It was felt by the bronchoscopist that this narrowing was due to extrinsic pressure on the bronchus. The next day the atelectasis of the left upper lobe was present again, and nearly complete. A barium swallow revealed no evidence of extrinsic or intrinsic defects of the esophagus and on fluoroscopy the mass observed in the left hilar area was seen not to pulsate.

During the next three weeks the patient seemed to improve slowly; respirations became almost normal, and he was comfortable out of oxygen. Follow-up chest films revealed almost complete clearing of the atelectasis. The hilar mass persisted, however. The cardiac signs remained unchanged.

However, on the 27th hospital day the patient once again developed marked respiratory distress. Breathing was dyskinetic and accompanied by coarse rhonchi, wheezing, and inspiratory stridor. The pulse rate became more rapid and the liver enlarged. His condition became progressively worse during the next



Fig. III. View of pulmonary ring displaying absence of valve cusps.

three days and on the following day a tracheostomy was performed because of what seemed to be an obstructive component limiting inspiration. During this period x-ray findings remained essentially unchanged and the patient was afebrile.

Twenty-four hours after insertion of the tracheotomy tube the patient's general condition became much worse. Respiratory distress was marked and for the first time he was noted to be definitely cyanotic. A diastolic murmur was also noted for the first time. He died a few hours later, having exhibited terminally a classic picture of congestive failure and pulmonary edema.

Laboratory Findings

Hematology. Admission WBC 10,400; Hgb. 10.8 gms. Differential normal. Subsequent WBC's ranged from 10,000 to 15,000. Sick cell preparation was negative.

Routine urines were all normal.

PPD's negative in all strengths.

Chemistries. Blood sugar, Na, K, Cl and CO₂ were within normal limits.

Stool examination was negative for blood, ova and parasites.

EKG: Tachycardia with right ventricular hypertrophy and strain.

Autopsy Diagnoses

Primary. Congenital malformation of the pulmonary valve of the heart, with absence of the valve cusps and a high interventricular septal defect, 7 mm. in diameter.

Hypertrophy of the myocardium of the right ventricle, marked, and of the left ventricle, moderate.

Dilatation of the pulmonary arteries, marked.

Congestion of the liver, passive, acute, mild.

Emphysema, pulmonary, marked.

Atelectasis, pulmonary, multifocal, mild.

Bronchopneumonia, left lower lobe (noted on microscopic).

Discussion

Review of our patient and those previously reported shows that two patients with this condition died in early infancy while two others lived to reach adulthood. A fifth, a 14-year-old boy who had valvular agenesis *without* associated interventricular septal defect, is still living. Each patient has had loud, harsh, systolic murmurs, but the locations of these murmurs have not been consistent.

Diastolic murmurs have been noted in each case, but most have appeared terminally and with the onset of congestive failure, which was the mode of death in those individuals who expired.

Cyanosis has been reported in each patient although its presence has not been persistent and has usually been associated with periods of distress. Wheezing and emphysema were early signs in both infants who died. Blood-pressure has been slightly to moderately elevated in all cases, and in every instance EKG's revealed right ventricular hypertrophy along with many other individual variations from normal. X-rays without exception revealed either "evidence of hilar mass" or "dilated pulmonary arteries." It is interesting to note that the location of this radiopaque mass may be on either side.

Postmortem examinations without exception revealed changes associated with

congestive failure, complete absence of the pulmonary valves, and interventricular septal defect. (The patient living has no interventricular septal defect). Overriding of the aorta was noted in one-half of the cases. Microscopic arteriolar changes were considered indicative of the presence of pulmonary hypertension. The atelectasis and emphysema on the left side, in our case, were clearly secondary to pressure on the left main stem bronchus by the dilated pulmonary artery.

The observation that two individuals lived to adulthood with this condition while two others died in early infancy is an interesting one. From the work of Kay and Thomas⁵ it has been demonstrated that dogs have adjusted reasonably well following pulmonary valvulotomy, even though they have had a moderate decrease in exercise tolerance. Further, it is known that one individual with pulmonary valvular agenesis without interventricular septal defect is still living. These facts then suggest that the presence of the interventricular septal defect is of vital importance in determining the patients' clinical course. However, attempts to correlate the size of the septal defect, and/or the presence of overriding of the aorta, with the patients' clinical courses have been unsuccessful.

From these facts it might be concluded that the size and/or location of the defect is of importance only in so far as it influences the degree and direction of shunt, since it is the shunt which is felt to be the most significant prognostic factor. It

would follow that the prognosis of patients with the above lesions could be related directly to the degree and direction of interventricular shunting, and that factors such as emphysema, atelectasis, and pneumonia could, by adding to the already elevated pressure in the pulmonic circulation, bring about a reversal of the left to right shunt and precipitate an irreversible course. It is suggested that the two deaths in infancy can be explained best on that basis.

Summary

A patient with pulmonary valvular agenesis and interventricular septal defect has been presented. This case and the three cases reported previously are reviewed.

It is postulated that the volume and the direction of shunting through the ventricular septal defect, and the factors influencing the degree of shunting are of critical importance in influencing longevity.

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OBSTETRICAL CASE REPORT

Prepared by HANS TAUBERT, M.D.

THIS is the case of a 32-year-old colored, para 7-0-1-7, who had been registered in the Prenatal Clinic since the 21st week of the present pregnancy. The test for syphilis was negative, the Rh factor was positive, and her blood type was AB.

The past obstetrical history revealed that she had suffered pre-eclampsia with her first and second pregnancy at the age of 14 and 16 respectively. All but one pregnancy terminated with uncomplicated vaginal deliveries; one resulted at 14 weeks in a spontaneous abortion. The largest baby weighed 8 lbs., 7 oz. Her past medical history and the family history did not contribute pertinent data.

The present pregnancy had been complicated by excessive gain of weight, from 165 to 205 lbs. There had been slight pretibial edema, but the blood pressure remained at all times below 130/90 mm Hg. Hydrochlorothiazide was prescribed on several occasions, and she was advised to follow a low sodium-low calorie diet. Since she did not cooperate there was no reduction in weight or decrease in edema.

The patient entered the Delivery Suite at 8 P.M. on the fifth day past her expected date of confinement. She had been having irregular and mild contractions for about two hours. Membranes were intact and there was no bloody "show."

At the time of admission the fundus of the uterus measured 30 cms. above

the symphysis pubis. Fetal parts were felt on the right side of the uterus, and the fetal heart tones were heard in the left lower quadrant. The presenting vertex was not engaged. Rectal examination revealed membranes bulging, 1-2 cms., dilatation of the cervix with about 50% effacement and the vertex at —3 station.

The blood pressure was 130/80 mm. Hg. The reflexes reacted normally. There was a 2-plus pedal and pretibial edema. The remainder of the admission physical examination was within the limits of normal. The attending physician did not consider the patient to be in labor, but admitted her because of excessive weight gain and edema. Urinalysis on a clean "caught" specimen failed to show the presence of albumin.

The patient was given 500 mg. of Hydrochlorothiazide and placed in the observation room. Uterine contractions became quite mild and she was resting well. Seven hours after admission (at 3 A.M.), the patient was roused from sleep by the onset of hard uterine contractions, which recurred every 5-7 minutes and lasted about 35-50 seconds. A rectal examination was performed and the cervix was found to be 3-4 cms. dilated, 75% effaced and the presenting part was still unengaged. A few minutes later the membranes ruptured spontaneously. Fifty mg. of Demerol and 0.4 mg. of Scopolamine were given intramuscularly for sedation. About 10 minutes after sedation had been given, the rectal examination was repeated. The

From the Department of Obstetrics and Gynecology, School of Medicine, University of Maryland, Baltimore, Maryland.

vertex was by now at —2 station above the interspinous strait. A soft tissue mass could be felt, which was identified by vaginal examination as two loops of umbilical cord protruding from the cervix. The cervix was 5 cms. dilated, but felt rigid. Pulsation of the umbilical vessels could be felt. The rate was irregular and averaged 70 to 80 per min. The patient was immediately placed in Trendelenburg position, and oxygen was administered by mask. The examiner displaced the vertex upward in such fashion as to prevent the umbilical vessels from being clamped off between the cervix and the fetal head.

Vaginal delivery was, under the prevailing circumstances, out of the question. Two units of blood were immediately requested. The patient was moved to the Operating Room, with a physician constantly keeping the fetal head from descending further. Frequent checking of the fetal heart rate revealed it to be now between 90 and 100 per minute. Under general anesthesia a classical cesarean section was performed. A full term living female child was delivered from LOT. The infant appeared sluggish and cyanotic. It was given an Apgar-Rating of 6. It responded to resuscitation satisfactorily once intubation had been carried out.

The patient withstood the procedure of operation well. Her post-operative course was uneventful and afebrile. She was discharged on the eighth postoperative day, with both infant and mother in good condition.

Comment

Occult and overt prolapse of the umbilical cord is a frequent cause of fetal death. It is referred to as presentation of the cord when loops can be felt by the palpating finger through the cervix, and actual prolapse when it enters the

vagina or even protrudes from the vulva.

Any factor which interferes with the adaptation of the presenting part of the fetus to the inlet of the true pelvis predisposes to such event. Thus it will be associated most commonly with shoulder presentations (in 14.27%) and footling breeches (4.54%) and transverse lie. It is less common with cephalic presentations (0.37%), but occurs with hydramnios, with failure of the fetal head to engage, in cephalo-pelvic disproportion, fetal anomalies or hydrocephalus, or with abnormal flaccidity of the lower uterine segment. It should always be anticipated when rupture of the membranes happens with a not engaged or floating presenting part, hence more commonly in multiparas than primiparas. The incidence is higher in premature births. In the case reported the obstetrician failed to listen to the fetal heart tones and to examine the patient promptly upon rupture of the amnion. Thanks to quick and efficient management the final outcome for the fetus was good once the diagnosis was established. It cannot be overemphasized that precious and decisive minutes can be lost by delay in making this diagnosis.

It is a valuable axiom of obstetrics to frequently note the rate and quality of the fetal heart tones in any instance of spontaneous rupture of the membranes. This should be followed by rectal or vaginal examination, not only to ascertain changes of cervical dilatation and in the station of the presenting part, but to rule out prolapse of the cord, of small parts, or pathologic presentations. The same precautions apply when amniotomy is performed with the presenting part unengaged. When this procedure is indicated and where the fetal head lies above the superior strait of the pelvis, facilities for immediate cesarean section must be available.

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Dean's LETTER

MEDICAL SCHOOL SECTION

*Dear Members of the Medical Alumni, Students,
and Friends:*

The opening of the Medical School for 1961-1962 and the initiation of a new class of entering students to the study of Medicine calls for a restatement of the ideologies of medicine and citing the obligations of physicians to society.

The indoctrination of the entering medical students is planned and conducted by the medical student body, the Faculty, and alumni representatives. A tea sponsored by the medical student wives provides for informal introduction of entering students to Faculty and medical students.

While the atmosphere is that of friendliness and assistance, the indoctrination emphasizes the ideologies and serious responsibilities of the physician. The University of Maryland is proud of the fact that its primary program is the education of the practicing physician. We are careful to instill the ideology that in addition to being an excellent physician, the practitioner must be available to his patients on a 24-hour-a-day basis, every day during the year regardless of other obligations. We recognize that physicians can fulfill their patient obligations by substituting for each other during necessary absences from their practice.

A knowledge of the obligations of a physician to society and their acceptance are as essential in the development of a physician as the sciences that are taught in the curriculum.

Sincerely,

WILLIAM S. STONE, M.D.
Dean

The Dean's Statement on the Baltimore City Hospitals Controversy

Historically, the teaching services at the Baltimore City Hospitals have been managed jointly by the professional staffs of the University of Maryland and the Johns Hopkins University Schools of Medicine. With the abandonment of the voluntary staff system and the institution of "full-time" clinical department heads, certain differences between the schools have evolved. Recently these differences were aired in the local press. The BULLETIN has therefore asked Dean William S. Stone to present the University's position relative to this problem which at the time of publication has not been settled.—EDITOR.

OVER fifty years ago the Baltimore City fathers asked the University of Maryland School of Medicine and the Johns Hopkins School of Medicine to assist in the care of patients at Bay View, now Baltimore City Hospitals. Both medical schools accepted this request. The Johns Hopkins Medical School, using Dr. Thomas R. Boggs, assumed the responsibility for the medical service which at that time included pediatrics and psychiatry. The University of Maryland, using Dr. Arthur M. Shipley, assumed the responsibility for the surgical service which included obstetrics, gynecology, ear, nose and throat, ophthalmology, and radiology.

The city only paid part-time salaries for the chiefs of services and their assistants. Medical students of both medical schools and house officers received a part of their education at Baltimore City Hospitals. Each medical school supplemented the salaries of the chiefs of services on the services for which they had the responsibility at Baltimore City Hospitals.

The quality of patient care rendered was excellent and many physicians obtained a substantial part of their medical education from the programs at Baltimore City Hospitals.

There was close liaison between the two medical schools and an exchange of teaching took place in both undergraduate and graduate medical levels, wherever it appeared to be desirable and appropriate. Many of the outstanding figures in medicine participated in and developed under this program—men such as Dr. Maurice C. Pincoffs, Dr. Louis H. Douglass, Dr. John T. King, and Dr. Milton C. Winternitz.

About 1950 it became obvious that the responsibilities for patient care and medical education at City Hospitals warranted the establishment of full-time chiefs of services. The first ones authorized were in the medical areas of internal medicine, pediatrics, pathology, and tuberculosis in which Johns Hopkins Medical School held primary responsibility. Funds were not made available by the city to establish full-time chiefs of services in the surgical areas until 1955.

At this time the chiefs of the medical area of services at Baltimore City Hospitals, whose primary appointments were with Johns Hopkins Medical School, combined with welfare representatives to install a Johns Hopkins faculty member as chief of surgical service at Baltimore City Hospitals over the protest of the

MEDICAL SCHOOL SECTION

University of Maryland School of Medicine, and in violation of a working agreement between Baltimore City Hospitals and the University of Maryland School of Medicine that had been in existence for over 50 years. This action was appealed to the Baltimore City Welfare Council and to the Mayor of Baltimore City, but the action was sustained allowing Johns Hopkins to take over surgery at Baltimore City Hospitals.

Because of this action the University of Maryland School of Medicine had to withdraw from the surgical teaching program at Baltimore City Hospitals. Partial participation in the teaching of University of Maryland medical students at Baltimore City Hospitals in obstetrics and gynecology, internal medicine, radiology, and anesthesiology has been attempted since 1955. Maryland students have not received adequate support for their teaching program by Baltimore City Hospitals and students were withdrawn from obstetrics and gynecology teaching areas at Baltimore City Hospitals as of July 1, 1960.

Recently attempts have been made to have the situation on the teaching of

house officers and medical students at City Hospital reviewed by the Baltimore City Board of Estimates. This action was brought about by the findings and recommendations of a medical committee of the Baltimore City Medical Society.

The position of the University of Maryland School of Medicine in its relationship with Baltimore City Hospitals is that it must be granted equal privileges and authority with Johns Hopkins Medical School in working in the care of patients and medical education at Baltimore City Hospitals. The authority and privileges of each medical school should be the same in carrying out its mission. Both medical schools can, and we are willing to work in close harmony in exchange of teaching on an equal basis.

The University of Maryland School of Medicine cannot participate at Baltimore City Hospitals unless it is granted the rights and privileges that are essential in maintaining the quality of medical education, such as appointing its faculty, supervising the teaching of its students, and maintaining excellent quality of patient care.

WILLIAM S. STONE, M.D.

Dean

Faculty

NOTES

Department of Anatomy

DR. VERNON E. KRAHL, Professor of Anatomy, was one of ten American scientists invited to participate in an international symposium on the structure and function of the lung, held in London, July 18-20. The meeting included about 20 European scientists and was sponsored by the CIBA Foundation.

DR. CHARLES CHRISTOPHER O'MORCHOE, presently a member of Trinity College, Dublin University, has been appointed visiting lecturer in anatomy. A graduate of Trinity College, Dublin, Dr. O'Morchoe served residencies in surgery and medicine at Halifax General Hospital in Yorkshire, England. His recent interests have concerned circulation of the kidney and his scientific writings have been published in a number of reputable journals.

DR. CHARLES G. CRISPENS, JR., Instructor in Anatomy, has been granted the sum of \$30,000 from the National Institutes of Health to explore the possible role that viruses may play in the origin of tumors in mice.

An outgrowth of previous research, Dr. Crispens will study the enzyme content of blood during tumor growth in mice, attempting to trace the source of the enzyme. A variety of spontaneously transplanted and chemically induced tumors will be used.

Department of Biological Chemistry

DR. WILLIAM S. STONE, Dean of the School of Medicine, has announced the promotion of DR. ARTHUR J. EMERY, JR., of the Department of Biological Chemistry, to Associate Professor of Biological Chemistry.

THE NATIONAL SCIENCE FOUNDATION has recently awarded a grant of \$20,000 to Dr. Edward J. Herbst, Professor of Biochemistry, toward a continuance for an additional period of time his research on the molecular form and function of spermine, a widely distributed factor essential for the growth of microorganisms.

Dr. Herbst has already shown that culturing an organism such as *Escherichia coli* in a spermine containing medium increases the size of ribonucleic acid particles, believed to be active ingredients in protein synthesis.

Dr. Herbst is being assisted by Mr. Joseph L. Colbourn, a graduate fellow in the Department of Biochemistry.

Department of Medicine

DR. WILLIAM S. STONE, Dean, has announced the promotion of DR. ADALBERT SCHUBART to Associate Professor of Medicine.

A native of Germany, Dr. Schubart was educated at the University of Berlin and at the University of Heidelberg, where he earned his medical degree in 1947. He served his internship at the Ludof Krehl Klinik in Heidelberg, and was later a contract physician for the 130½ Station Hospital of the U. S. Army, entering the United States as a permanent resident in 1953.

After a year in the medical service at the University of St. Louis, he came to the University of Maryland as an assistant resident in 1955 and has remained at the University, excepting for a two-year period of training at the Harvard Medical School and the Massachusetts General Hospital.

Department of Ophthalmology

DR. RICHARD D. RICHARDS, Professor of Ophthalmology and head of the Department of Ophthalmology, has been

awarded a three-year grant totalling \$36,000 by the National Institutes of Health to support a study of radiation cataracts. Dr. Richards is interested in catarological processes in cataract production along with the analogous effects of radiation on other living tissue, specifically clinically oriented and basic in its concept.

Department of Pathology

DR. PAUL F. GUERIN of the Department of Pathology has announced the opening of an office for the practice of laboratory medicine at 1010 St. Paul St., Baltimore 2, Md.

Department of Physiology

DR. WILLIAM S. STONE, Dean, has announced the appointment of DR. GABRIEL GEORGE PINTER, who arrived July 1 from the University of Tennessee, where he has been Assistant Professor of Physiology.

Department of Psychiatry

DR. FRANCIS T. RAFFERTY has been appointed Associate Professor of Psychiatry in the School of Medicine.

In announcing the appointment, Dr. William S. Stone, Dean, recounted Dr. Rafferty's training, which included his basic medical training at the University of Utah College of Medicine, including his previous experience in which he served as Director of the Division of Child Psychiatry and the Utah Child Guidance Center at the University of Utah College of Medicine, where he served also as Assistant Professor of Psychiatry.

Dr. Rafferty is a graduate of St. Mary's College in Minnesota and received the M.S. degree at the University

of Colorado and later his M.D. at St. Louis University. He served his internship at St. Louis City Hospital and a four-year residency in psychiatry at the University of Colorado.

Following several years in the United States Army, which included a year as Assistant Chief of the Neuropsychiatric Service of Tripler Army Hospital in Honolulu, he went to the University of Utah as an instructor in psychiatry and in 1957 was promoted to the rank of Assistant Professor of Psychiatry and Assistant Clinical Professor of Pediatrics.

In 1958, under the sponsorship of a grant from the National Institute of Mental Health, he established an adolescent treatment center at the University of Utah, accompanied by a specially supervised foster home placement service.

His publications include several reports on the psychiatric treatment of disturbed children.

Dr. Rafferty is a member of many professional societies, including the Society of Sigma Xi, Alpha Omega Alpha, and the Utah Psychiatric Society, of which he is president. He is a Fellow of the American Psychiatric Association and chairman of the association's section on child psychiatry.

DR. MARINO VEIGA has been named Assistant Professor of Psychiatry in the School of Medicine. In making the announcement, Dr. William S. Stone, Dean, cited Dr. Veiga's work in criminology and child psychiatry. He is a native of Spain and a graduate of the University of Barcelona, where after serving a rotating internship at the General Hospital of the Central University of Madrid, he returned for a three-year residency in psychiatry. Following this he was appointed to the teaching staff of the school, first as instructor, and later

as assistant professor in legal medicine and psychiatry.

In 1955, Dr. Veiga came to the United States and continued his psychiatric training at New York's Central Islip State Hospital and at Kings' County Hospital in Brooklyn, with additional work at St. Luke's Hospital in Manhattan, where he held a research fellowship in child psychiatry. He is a founding member of the Asociacion de Neuropsiquitria Infantil and is a member of the Asociacion Psicoanalitica Espanola and Asociacion Espanola de Endocrinologia in Spain and of the American Psychiatric Association.

Department of Radiology



DR. FERNANDO BLOEDORN has been appointed Professor of Radiology in the School of Medicine by the Dean of the School of Medicine, Dr. William S. Stone. Dr. Bloedorn has been a member of the faculty since 1955, serving as Associate Professor of Radiology and Head of the Division of Radiation Therapy. Since 1958 he has also served as Assistant Professor of Radiology at the Johns Hopkins University School of Medicine.

Dr. Bloedorn's interests have centered principally about the application and de-

velopment of high intensity radiation therapy, and he has shown particular interest in the development of a method of treating bronchogenic carcinoma, this study being done in collaboration with Dr. R. Adams Cowley of the Department of Surgery.

A native of Argentina, Dr. Bloedorn took most of his preliminary medical training in his native land, and also had periods of training at the Curie Institute of Paris, the Radiostationen of Copenhagen, the Radiumhemmet of Stockholm, Christie Hospital of Manchester, and the Royal Cancer Hospital of London. He also served as senior resident in radiation therapy at the Francis Delafield Cancer Hospital in New York City. Dr. Bloedorn was also associated with the University of Texas Postgraduate School of Medicine and was associate radiotherapist at the M.D. Anderson Hospital for Cancer Research.

He is a member of many professional organizations, including the American College of Radiology, Pan American Medical Association, and the International Club de Telecobaltherapie. He is also a member of the National Institute of Health's committee for comparative study of the end results of radiation, and is chairman of the protocol subcommittee on bronchogenic carcinoma. He has published many reports of his original research. Dr. Bloedorn is co-editor of the Section on Head and Neck in the *Yearbook of Cancer*.

Faculty Travel Notes

DRS. SAMUEL P. BESSMAN, Professor of Pediatric Research, and ROBERT G. GRENELL, Professor of Neurobiology in Psychiatry, attended the Fifth International Congress on Biochemistry August 10-16, 1961 in Moscow.

DR. LORIN J. MULLINS, Professor of Biophysics and head of the department, also attended.

DR. RAYMOND A. SJODIN, Associate Professor of Biophysics, participated in the First International Biophysical Congress held in Stockholm July 31 to August 4. Dr. Sjodin presented a paper entitled "Some Cation Interactions in Artificial Membranes."

DR. FERNANDO BLOEDORN, Professor of Radiology, and head of the Division of Radiotherapy, was a visitor to his native South America, where he delivered an invitation lecture at the first National Cancer Congress in Bogota, Colombia, and the seventh Inter-American Congress of Radiology in Sao Paulo, Brazil.

Dr. Bloedorn also lectured at the University of Montevideo School of Medicine in Montevideo, Uruguay on the subject "Preoperative Irradiation for Carcinoma of the Lung and Esophagus." Later, in his native University of Buenos Aires, in Argentina, Dr. Bloedorn delivered a lecture entitled "Interstitial Radium in the Treatment of Cancer of the Head and Neck."

School Receives P.H.S. Teaching Grant

DR. GLADYS WADSWORTH, program director of the physical therapy curriculum, has announced the receipt of a grant of \$8,547 from the Office of Vocational Rehabilitation of the U. S. Department of Health, Education, and Welfare. The grant will provide for expansion and improvement of the school's physical therapy program, which is pri-

marily designed to train physical therapists to meet the demands of rehabilitation programs which are in progress of development throughout the country. The grant is accompanied by two undergraduate scholarships, which will provide tuition for junior students in the physical therapy program.

Mercy Hospital News

Dr. Vernon M. Smith Receives Hartford Foundation Grant

A GRANT of \$141,335 has been acknowledged by Mercy Hospital for the purpose of the development of a gastroenterology research laboratory and clinic, and for the advanced study of the digestive system in health and disease. Dr. Vernon M. Smith, Professor of Clinical Medicine at the School of Medicine and Head of the Department of Medicine at Mercy Hospital, will direct the program. The new research clinic will serve to further disseminate current knowledge and to make worthwhile contributions to the understanding of function and treatment of the digestive system and its disorders. It will also enhance the hospital's role in medical teaching of residents and senior students.

It is anticipated that original investigations will center about motility studies, radiologic examinations, photoendoscopy, cellular washings, tissue biopsy, and digestion and absorption studies.

The Hartford Foundation was originally established by John A. Hartford, founder of the Great Atlantic and Pacific Tea Company. It is the fourth largest private foundation in the country. Its income is used primarily for support of medical research.

At the time of the dedication of the School of Medicine, an observer wrote, "Standing on the portico beneath the columns, one gazes southward across the rolling, green fields to the placid waters of Spring Gardens."

The Campus —

A 1961 Record

During the more than a century and a half, the old building now called Davidge Hall has changed but little; however, the passage of time has obliterated the green, rolling meadows south of the portico and has seen the rise of first a residential district, then of a decaying order, happily now to be replaced. But few records of the School and its environment exist. From scattered prints and brief description, it is possible to trace the evolution of the environment of Davidge Hall. There are many questions which will forever be unanswered.

Since the graduation of a large number of the alumni of the School of Medicine, the immediate environment of what we may proudly call the campus has considerably changed. It will change more as the City of Baltimore's redevelopment and slum clearance program advances parallel to the plans of the Board of Regents for the expansion and orderly development of the Baltimore schools, of which the School of Medicine is a part. Alumni of some distance and of some years will be interested to see these changes, and that is why your editor, accompanied by Mr. Frederick A. Eichenberg, of the Department of Art, chose a bright, sunny, May 17 for a leisurely trip about the campus. The editor's words and Mr. Eichenberg's photographs, we hope, will interest the potentially nostalgic. We hope they will record a profile of the School's environment on May 17, 1961, as a record of what was there then. Let us start.

Traditionally, we stand at the entrance of Davidge Hall (1). The old bulletin boards have been cleared away and the drinking fountain replaced by a bust of John Beall Davidge. The memorial to James Carroll still stands. The door to the Dean's Office is to the left, that of the Admissions Committee to the right.

We look somewhat to the right to the old hospital. Lombard Street is one-way east. The streetcars are gone. The old building is still used as the Out-Patient Department and for teaching. Horses are still on the street in Baltimore (2). The bricks are still there. So is the Resinol Company across the street (3) and the Peanut Company. However, the old "Inn" and the Hancock Company have fallen victims to progress. The new Health Sciences Library occupies their former site.





A look to the right of the old benches shows the linden tree (4) and then to the left: they that still study here in the slanting rays of the morning sun (5). We go down the brick walk and down the granite steps. Beyond the iron fence, we look east toward the intersection of Paca Street and Lombard (6). Little is changed. Paca Street is one-way north. They still clean the streets here in the same way, and they are still about as clean. Do you remember the Gray Laboratory? Here is a close view as we walk east (7). We now stand on the southeast corner of Paca and Lombard and look west. Everything is much the same as it has been since 1928. The tie factory is still to the right and the Administration Building just north of the parked truck (8). We pause and look north toward Redwood Street. The livery





stable is gone, and the paint store on the corner of Redwood and Paca (9) where Resisto Ties are now made was once the entrance leading to the sixth floor of this building (10), known to a generation as the site of the "Annex" where Histology, Embryology, and Neuroanatomy were taught during the regime of the late Carl L. Davis and John Lutz. We now walk north on Paca Street to a point opposite the old livery stable or what was later the Biltmore Garage. Half way in the block we pause. To the left is the rear of the Bressler Research Building. Directly through the open space is the hospital and to the right the School of Law (11). At the corner of Redwood and Paca, we look north to Baltimore Street where the restaurant and the old bar have been replaced by a parking lot. The building on the northwest corner is now vacant. The Bressler Building still may be seen just above the metal box. The building in the foreground and the structure on the north side of Baltimore Street will be demolished. The hotel will remain and will become a part of the campus, which as a part of the redevelopment program, will extend from Pratt Street to Fayette, Paca Street being the easternmost extent of its development (12 and 13). At Redwood and Paca, we pause and look west on Redwood Street. Behind the truck, one can see that "the lone ranger still rides (14)."





Standing on the northeast corner of Baltimore and Paca, the vista seems to submerge the hospital and associated structures. However, redevelopment calls for the removal of practically everything within the foreground (15). We now turn west on Baltimore Street (16) to Greene where we pause beside Mr. Melnicove's shop and look north beyond the east side of the street past the wall of the Westminster Presbyterian Church with the public school in the background. Greene Street north of Baltimore has changed but little since the turn of the century (17). We turn south towards the hospital and the School.

Greene Street is one-way south and is a link between U. S. Route 40 and the Baltimore-Washington Expressway. Traffic is heavy, and at the noon hour photographs are difficult. The hardware store still graces the southwest corner of Baltimore and Greene, but it, too, will be replaced by redevelopment and an extension of the north wing of the University Hospital. Redevelopment will take the bar on the southwest corner, the restaurant and the two intervening buildings. Restaurants and filling stations will disappear. Below Redwood Street in the next block, you can see the Bressler Building, the old Pathology Building, and in the distance the new library (18). We pause and turn east to see the Law School, which will remain, and the many signs, which will fall to redevelopment (19). From the filling sta-



tion, the hospital and lower Greene Street look like this (20), and looking west along Redwood Street, a parking lot has replaced the Poor Men's Mission. The Psychiatric Building is now surrounded by the brick wall. All of the old houses have been torn down to make way for it. Just west of the hospital (the solid brick edifice with four windows) is the Department of Radiology and the future home of the Betatron, now being built for the University. With redevelopment, the Regal Shop and all structures down to the old Hecht Company store, now Howard Hall, will give way for the north wing of the hospital. It is anticipated that Redwood Street will be closed (21).

From the northwest corner of the hospital, Redwood Street looking west, is seen the newly acquired Howard Hall. Plans are in progress for the conversion of Howard Hall into a Basic Science and Research Building (22).

University Hospital is still a busy place—more beds; more people; more research; accidents; the bitter; the happy; teaching; and all that goes with a big hospital in a big city (23). Curbstone consultations are still in vogue.

We pause in front of the hospital and look south to the Bressler Building, the Pathology Building, and in the distance, the new library (24), then climbing the granite steps to the Pathology Building, we look north (25) and south (26) and then across to the hospital





(27). We then walk to the corner of Lombard and Greene Streets, passing old Davidge Hall (28) and the big linden tree, and grassy slopes surrounded by the old iron fence, but little changed. Where the old library used to be is now the new Health Sciences Library. The large building in the background is slated to go with the redevelopment plans (29). We cross the street to the Out-Patient Building and take another look at Davidge Hall (30). We turn west on Lombard Street toward Penn Street. Here a great number of changes have taken place. The old University Hospital still stands. Its facade connotes many memories (31). We look west and along the south side of the street past the old hospital to the new Student Union (where the old "OB quarters" used to be) (32). The Student Union will eventually replace the old hospital and its Out-Patient Clinics when the new north wing of the hospital has been completed.



Proceeding down the street a bit, developments along the north side beyond the Dental School come into view (the north side of Lombard Street). Where the Lutheran Church used to be (adjacent to the entrance of the Nurses Home, now known as Parson's Hall) is a new Nursing Arts Building—Whitehurst Hall (33). Beyond it, we see the new Pharmacy School replacing the old homes and the grocery store. From the south side of Penn Street, here's how the new campus appears, looking toward the "Bromo" tower. The junk yard is replaced by the Kelly Memorial Building of the Maryland Pharmaceutical Association. The Pharmacy and Nursing Arts Building extend up to the Nurses Home (34). On the northwest corner of Penn Street and Lombard, the City of Baltimore has recently completed a new Western Health District Building replacing several unimpressive structures and the old, grey victorian building which had so many iron balconies and porches (remember?) (35).

We cross over to the northwest corner and look east on Lombard Street. Beyond the "Park Here" sign is the Student Union Building. All of the old homes between Greene and Penn have now been demolished except for this group of nine, which will disappear with redevelopment (36). Again looking north on Penn Street, in the distance is seen the University Parking Garage (acquired from the Hecht Company) and the new Howard Hall (37).





From Penn Street east, the Psychiatric Institute and the University Hospital come into view (38). Even a bit of infamous Cider Alley and the cemetery wall beyond are seen—all that remains, now divested of its crime and ngly tradition (39). At Pine Street and Redwood, three old homes remain, a reminder of the early 19th century (40). To the west extending to Fremont is the wall of St. Paul's Cemetery, so much a part of the ancient history of Baltimore (41). We turn east toward the hospital again with the parking garage in the foreground and the Psychiatric Institute and hospital in the distance (42). As we again approach Redwood and Greene, several old houses and the Regal Shop, now empty, serve as remnants soon to disappear. Already parking lots occupy the vacant ground where demolition has taken place (43).

And so back to the campus—May, 1961.



ABSTRACTS OF ARTICLES BY FACULTY AND ALUMNI

Marriott, Henry J. L., M.D., and Schamroth, Leo, M.B.

A Controlled Short-term Evaluation of a New Antihypertensive-Diuretic Agent, Benzydoflumethiazide (Naturetin), in the Treatment of Essential Hypertension
South. M. J., 54:788, 1961

TWENTY-SEVEN PATIENTS with essential hypertension were placed on dummy tablets until a satisfactory base line blood pressure was obtained. They were then given benzydoflumethiazide (Naturetin), beginning with a dose of 5 mg. twice daily; this was increased by 10 mg. a day every two to three weeks, if the blood pressure had not responded, up to a maximum daily dose of 40 mg. In four patients no significant reduction of blood pressure was observed; in the remaining 23 patients, the mean blood pressure fell 17 mm. Hg or more (range 17 to 49 mm.). No side-effects of any kind and no dislocation of electrolytes were observed.

To reconfirm that the observed fall in pressure was drug-induced, 20 patients were returned to the identical dummy medication and 18 of these showed rapid or gradual, confirmatory resurgence of blood pressure.

It is concluded that benzydoflumethiazide is an effective agent for the short-term control of essential hypertension in the majority of patients.

Smith, Vernon M., M.D.

String Impregnation Test ("String Test") for Lesions of the Upper Digestive Tract
Ann. Int. Med., 54:16, 1961.

CERTAIN EROSIONS and ulcerations of the upper digestive tract continue to escape clinical detection, despite advances in the technics of radiology, gastroscopy, esophagoscopy, and blind biopsy. Failure to detect such lesions results in part from anatomic inaccessibility or technic inavailability in the case of endoscopy; from anatomic inaccessibility or lesion superficiality in the case of radiology; and from capsule placement errors in the case of blind biopsy.

Recognizing the potential value of a simple screening test for the integrity of the upper digestive tract mucosa, the author attempted to evaluate a string impregnation test ("string test"), modified after the technic of Einhorn, for mucosal lesions of this area.

Each of 206 subjects swallowed the weighted end of soft cotton-string or narrow umbilical tape, 100 to 110 cm. long. The free end was taped to the cheek and the string was allowed to remain in place overnight. The string was withdrawn the following morning and was then examined for stains of blood and bile. The distances of such stains from the lips were measured. Each string test was correlated with an upper gastrointestinal series radiologic examination performed shortly after string removal. Conditions present during the string tests of 206 subjects included acute esophagitis, acute gastritis, active duodenal ulcer niche, duodenal abnormality without niche demonstration, esophageal hiatus hernia, gastrojejunostomy stomal ulcer niche, gastric ulcer, prolapse of gastric mucosa, and radiologically normal upper digestive tract.

The presence of grossly visible blood stains on the recovered string was found to be an accurate indication of erosion or ulceration of contiguous mucosa. Some false-positive results occurred with lighter stains. The heavier the blood deposit, the more likely was there to be associated demonstrable mucosal disease. Negative string tests very accurately indicated normal contiguous mucosa. Deep bile discoloration of the distal end of the string was found to be a reliable indication that the string had passed into the duodenum.

From the correlated findings of string tests and upper gastrointestinal series radiologic examinations, the author concludes that the string test technic permits detection and localization of active ulceration and erosion of the upper digestive tract with desirable accuracy. The technic is simple, convenient, economical, and without complication. It can be used as a screening test and for the follow-up evaluation of upper digestive tract lesions. It can spare patients the cumulative effects of x-ray irradiation applied in the follow-up management of duodenal peptic ulcer.

It Happened 25 Years Ago in the *Bulletin*

ARTHUR G. SIWINSKI, M.D.

THE BULLETIN of 25 years ago contains an excellent "Brief Sketch of the Medical School of the University of Maryland, 1807-1920," by Dr. Randolph Winslow.

Dr. Winslow attended the medical school in the early 1870's, and later taught at the Medical School, being made Professor of Surgery in 1902, retiring in 1920, so that much of what he writes are personal reminiscences. In his address to the graduating class, Dean J. M. H. Rowland said of him, "He understands that at all times he is the physician—that the patient's interest is his first interest, and that his chief business is to advise, warn, comfort, and, if possible, bring healing. In other words, he is at all times and under all circumstances dependable, and, in so being, he is not too careful of his own comfort or convenience. His meals, his rest, his pleasures, his recreation, and often his health must be subordinated to his patients' welfare."

In this same issue, two scientific articles discussed 1) Alcoholic Injections for Localized Neurodermatitis by Francis A. Ellis, and 2) Cancer of the Thyroid Gland, with Report of 9 Cases by Harry C. Hull.

The Alumni Section contained a report by Tommy Aycock of the presentation to City Hospitals of portraits of Dr. A. A. Shipley and Dr. T. R. Boggs in honor of 25 years of service, and also an account of an alumni meeting of the New England Section attended by 83 Maryland graduates.

Under "Items," it was noted that Dr. Eduard Uhlenhuth, Professor of Ana-

tomy, was awarded the Van Meter Prize of the American Association for the Study of Goitre for his thesis "Isolation of the Thyreo-Actioator Hormone from the anterior lobe of the Bovine Pituitary Gland."

Operation Impact

THE MUSHROOM CLOUD of an atomic "explosion" and the gore of artistically simulated injuries lent realism to *Operation Impact!*, a field demonstration of mass casualty management methods on May 7, 1961. Two hundred junior and senior students of The University of Maryland School of Medicine witnessed the demonstration at Fort George G. Meade as the culmination of their MEND-sponsored training course in emergency medical care and disaster medicine. Sponsored by the MEND program, the demonstration was conducted by personnel of the 104th Medical Battalion, 29th Infantry Division, Maryland Army National Guard in cooperation with Vernon M. Smith, M.D., MEND Coordinator.

William S. Stone, M.D., Dean of the School of Medicine, briefly introduced the program and stated that, "The knowledge of how to use medical skills in an emergency is a fundamental responsibility of all members of the medical profession."

A short talk on the philosophy of mass casualty management was given by Col. Edmund G. Beecham, MC, Commander of the 104th Medical Battalion, who stressed the similarities between the mass disaster problems of civilian and military medical practice.

A simulated atomic explosion heralded the beginning of the field demonstration and, against the background of the mush-

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vi. The Department of Art

BETH WILSON

NOT EVEN the frequent visitor to the medical school's art department is apt to realize how much the department's services have expanded since the arrival of its new director, William J. T. Austin, in 1958. What these services involve is even less apt to be appreciated and a brief account of department activities may provide useful information.

Three years ago activities were largely restricted to producing graphic teaching aids. Nowadays widely varied arts are employed for widely varied purposes. Photographs, taken and processed in color as well as black and white; full-length movies, graphs, charts, free-hand illustrations, posters, signs, exhibits, displays, and new techniques of photocopying and offset printing are contributing to almost every aspect of medical school affairs.

The time of the department is devoted, in almost equal measure, to photography, original art work, and duplicating.

Photography

Bill Austin's own interests are in photography, and particularly color printing, as is evident from the excellent examples of his work that are displayed in the department. A native of Canada, he received his photographic training from the Ontario Department of Education. His photographic experience includes three years in the aerial reconnaissance service of the Royal Canadian Air Force during World War II and 12 years as director of the art service department for the Faculty of Medicine of the University of Western Ontario, working for Dr. J. B. Collip, dean of the medical

school and internationally known endocrinologist.

Three other staff members assist in photography. Theodore S. Brinkmann was an aerial photographer during the war, with the U. S. 15th Air Force in Italy, and later worked for six and a half years as a technical photographer for the Baltimore and Ohio Railroad Company. Fredrich A. Eichenberg has been working at photography since he bought his first camera at the age of 10 in Germany, where he also helped his brother, a professional photographer. After coming to Baltimore, he studied photography at night at the Mergenthaler High School. Robert C. Torrence was trained in photography at the U. S. Air Force Photographic School in Denver, Col.; he also studied art at the Saff University School of Art in Tokyo and at the now-defunct Maryland Academy in Baltimore and was employed as artist and layout man at Fedder Advertising Corporation.

Ted Brinkmann and Fred Eichenberg both do copy work and on-location photographs—on the wards or in the operating room—as well as studio photographs. They make many color slides and movies of patients for records and teaching purposes, as well as candid black and white shots for publications.

Bob Torrence does a good portion of the black and white printing and takes nearly all of the photographs for the student year books, as well as many application portraits. Maintaining his amateur zeal undiminished, he likes to take atmosphere shots of the campus through the changing seasons; most of the pho-



Fred Eichenberg in operating room with new Bolex motion picture camera

tographs on display at the opening of the hospital's newly remodeled 12th floor were his.

Last year the department met 6,324 requests for photographs; this involved making 636 portraits, 1,962 clinical photographs, 4,410 copies, 4,834 slides, and 836 publicity pictures.

Four darkrooms are in constant operation. One is devoted to black and white film processing and black and white slide printing, a second to black and white photo prints, a third to color film processing (in emergencies it can be used as a substitute for other darkrooms), and a fourth to graphic arts and production of large photo prints (up to 16x20 inches).

New cameras and darkroom equipment and a new constant source of hot water along with thermostatic controls have made it possible to improve film and print quality to meet reproduction standards. The new equipment is also capable of producing color transparencies and color prints up to a size of 16x20 inches.

Equipment for photomicrography, us-

ing a Bausch and Lomb microscope and camera, has been installed and is being tested under the guidance of Dr. Harlan Firminger.

Art Work

Thomas N. Stevenson, the department's medical illustrator, has been with the university since 1950, when he enrolled as a special student in the four-year course in medical illustration that was then being offered by the medical school. When it was discontinued at the end of his first year, he accepted a position as artist in the department.

He had previously completed a course in commercial illustrating at the National Art School in Washington, D. C.; in Baltimore he attended night classes at the Maryland Institute for three years, studying fine arts and sculpturing.

Steve, as everyone calls him, has had experience in almost every kind of work in the department. He no longer does any photography, as he did for the first few years, but his photographic background stands him in good stead in planning movies, exhibits, and displays that incorporate photographs, just as his long knowledge of the medical school stands

Miller-Trojan darkroom copy camera and new darkrooms



him in good stead in preparing visual teaching aids for faculty members.

Most of Steve's time is spent in making drawings that save the medical school teaching staff thousands of words of explanation. He does this easily because he has developed a feel for the needs of medical educators. Usually these drawings are converted into slides for projection or into prints for publication in journals or textbooks.

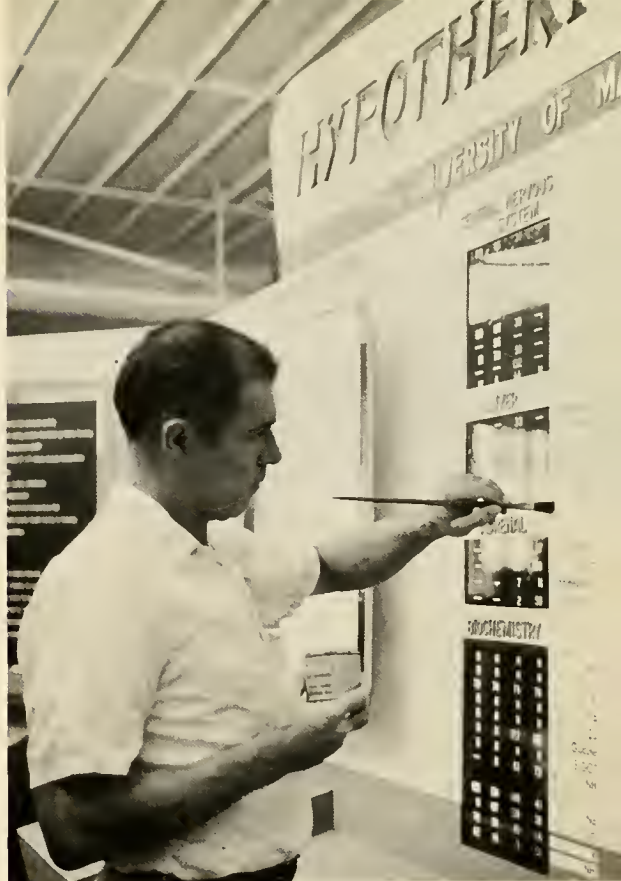
Of great importance to the art section is the graphic art which Raymond Rochkind turns out in a mass production fashion. Charts, graphs, signs, and posters are his routine. It is estimated that Ray during the past year has completed almost 2,000 pieces of graphic illustrations.

Ray attended Maryland Institute for four years and for the past two years has been attending night classes toward a bachelor degree in fine arts.

An increasing amount of art section time is being spent in designing exhibits for display at conventions and scientific meetings—projects that require coordinating the ideas and work of many people. Steve usually handles displays of this type. He first works out the design with the originator of the exhibit, then draws it to scale, and supervises the photography, typography, carpentering, painting, wiring, and other work that is necessary to complete it.

Now that commercial preparation of scientific exhibits has become big business the competition is keen, but in spite of this, a number of exhibits Steve has prepared for medical school faculty members have come away with honors.

Last year he completed two major displays: "Neoplasms of the Upper Urinary Tract," for Drs. John D. Young and James R. Powder, and "Central



Thomas Stevenson putting finishing touches on a display before crating

Causes of Sudden Death," for Dr. John A. Wagner.

Another activity that is taking more and more time is the preparation of full-length movies. Four of these were prepared last year—"Radium Needle Implants," for Dr. Fernando Bloedorn; "A Prosthetic Mitral Valve," for Dr. William G. Esmond; "Dystrophic Epidermolysis Bullosa," for Drs. C. Parke Scarborough and Harry M. Robinson, Jr., and "Intracardiac Surgery," for Dr. R. Adams Cowley.

On these, Steve and the department director, Bill Austin, collaborate with the author of the film on the format and design, the continuity, and the editing. Bill Austin has developed a reasonably priced system for making titles which has



A University of Maryland-produced display at regional A.M.A. meeting in Washington, November, 1960

considerably simplified and speeded up film production.

Duplicating

During the past year a large storage area at the rear of the art department was renovated to permit expansion of duplicating equipment and redistribution of photographic equipment. This has not only relieved the severe congestion of the department but has provided space and electrical requirements for two offset presses and other related equipment to improve the printing and duplicating.

A dry offset plate-making system using an electrostatic Xerox processor and a Miller-Trojan copy camera makes it possible to prepare multilith plates in from three to five minutes and also provides a quick way to reduce or enlarge drawings.

By such improved means, Carl D. Clarke, the department offset operator, was able to print more than half a million form sheets for the hospital and 50,000 for the medical school last year, as well as 8,000 invitations, 50,000 menus, and 1,000 student photographs.

With the addition of a new 11x17 offset press, a collator and stitcher, and a folding machine, as is planned next year, this production should be increased in quality as well as quantity and considerable savings in costs should result.

All in all, with the reorganization and improved techniques that Director Austin has achieved, his staff has now vastly increased its efficiency and he looks forward to further progress.

"My main objective," he says, "is to speed up service with the aid of specialized systems and equipment, and to keep ahead of the game."

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room cloud, Lt. Col. Arlie R. Mansberger, MC, narrated the demonstration. In rapid sequence the urgent matters of providing medical care for a mass disaster were detailed and demonstrated. A triage area was established where realistically simulated casualties were divided into the four categories of immediate, delayed, minimum, and expectant treatment. Technics of handling and transporting casualties and the pattern of evacuation of casualties according to priority classification were demonstrated.

The program was very well received. This was shown by rising interest and an increasing barrage of questions from the students as the demonstration progressed.

A milestone of sorts, *Operation Impact!* is the first participation by an Army National Guard unit in a training class for medical students in emergency medical care.

The success of this pilot exercise insures that a similar program, perhaps with active participation by the medical students, will be conducted during 1961-1962.



Louis H. Douglass, 1888-1961

ON July 23, 1961, the University of Maryland lost one of its beloved Professors, when Dr. Louis Harriman Douglass died at his home in Mt. Custis, Accomac, Va., after a long illness. To simply say that Dr. Douglass has enriched our community would be an understatement. No one living can obtain complete knowledge of the endeavors of another individual whose very nature is the embodiment of both charity and humility. Thus, any accounting of what Dr. Douglass has done for us will be incomplete.

Dr. Douglass was graduated from the University of Maryland with the degree of Doctor of Medicine in 1911. His association with the school began immediately and continued until his death. Two years after graduation he was appointed Resident in Obstetrics at University Hospital. Because of his ability and devotion it soon became apparent that his superiors were relying heavily upon him to supervise and handle all the service

work of the institution. This was the foundation of what was to come.

It was interrupted only by his term of service with the United States Marines during World War I. His duties in the Marines called him to the position of Chief of Medicine. He was not kept busy and consequently was unhappy. He deliberately transferred to a busier service with a lower position. His pride in this remained within him.

Upon his return from the service, he again plunged into the work of the Department of Obstetrics and soon became its Chief of Clinic. The Outpatient Department presented a distinct challenge which he readily accepted. He surrounded himself with a faithful group of men who carried out his ideas and applied his principles for the better care of the indigent expectant mothers of our city and state. He set up his office to adjoin the clinic and was available at all times for consultation with his co-workers. It

was always a comforting thought that advice and help was nearby from the oracle of obstetric wisdom. Here the art and science of obstetrics was practiced with a warmth of heart.

He became obstetrician-in-chief of Provident Hospital in 1929. Despite the heavy burden of his other duties he held himself ready to help the staff with their obstetric difficulties. In 1931 the Maryland General Hospital called upon him for the same purpose. In 1934 when the new general hospital of the Baltimore City Hospitals was opened, it was only natural that Dr. Douglass be appointed obstetrician-in-chief. This new maternity service, the largest in the city, became the scene of a great deal of his work. He brought the students here and put them in a position to live and breathe obstetrics. He appointed a staff of experienced men to support him in this training and his house officers ranked with the best. His hospital took on a new meaning and commanded new respect through his work there. City and University became synonymous because they both were supervised by Dr. Douglass. His trainees would leave either of the two institutions and soon receive high positions of authority in other hospitals. A great tribute to a great teacher.

In 1938 Dr. Douglass was appointed Professor and Head of the Department of Obstetrics. The title of Professor of Obstetrics at the School of Medicine, University of Maryland carries with it dignity and prestige. It was made famous by him. His own personal effort in building this department was directly responsible for the now well-known quality of obstetrics taught at the school and hospital. His know-how rubbed off on all who trained under him and they, in turn, have passed this knowledge on to their students. Dr. Douglass always pre-

pared his men to be leaders and teachers themselves—witness the fact that 14 of 17 Baltimore hospitals have had as their obstetricians-in-chief either him or those whom he trained.

The coming of World War II brought additional duties. He directed his teaching program 11 months a year in the accelerated instruction necessitated by the times. He accepted chiefship of District No. 2 of our local draft board. He accepted and carried out this responsibility with the same quiet wisdom and fortitude which characterized his entire life. At this time he saw many of his men go to war and, unable to obtain substitutes for them, he took upon himself the burden of their duties.

In 1947 his ex-residents formed a society in his honor, called the Dougtricians, holding annual scientific meetings. In 1959 it was expanded to the Douglass Obstetrical and Gynecological Society, to become permanently associated with the University's Department of Obstetrics and Gynecology.

Through the years his career abounds with other professional and civic attainments—all characterized by a faithfulness above the call of duty. If he was named to a committee, he was its most diligent worker. Active participation was his by-word. Medical meetings never wanted for his presence. No one hesitated to call upon him because he always seemed to have enough time to devote himself to a new and worthy cause.

He was president of the Baltimore City Medical Society; he served on its Grievance Committee; he was an expert witness for it; he was the Co-Chairman of its Maternal Mortality Committee; he was a member of the Board of Directors of the Baltimore Rh Laboratory created by the Baltimore City Medical Society. He served as Chairman of the State

MEDICAL SCHOOL SECTION

Maternal and Child Welfare Committee. He was president of the Maryland Obstetrical and Gynecological Society.

Such a man could not escape civic attainments. The States Attorney of Baltimore City called upon him frequently as an expert witness. The Mayor of our city appointed him to the Jail Board. The Blue Shield called upon him to formulate their physicians payment plan. Our executive Committee on Civil Defense was the recipient of his advice.

Louis Douglass' interests extended beyond the perimeter of his own state. He was a member of many national societies and associations. He served as a member of the Executive Committee of the National Federation of Obstetrical and Gynecological Societies, whose purpose was to protect and to improve the profession. His desire to improve the profession and the practice of obstetrics and gynecology led him to take a most active part in the formation of the American College of Obstetrics and Gynecology. This organization is open to all men who specialize in this branch of medicine and thus are exposed to the newer knowledge for the improvement of patient care. Dr. Douglass' colleagues honored him for his services by electing him to serve as its first Vice-President. In recognition of his professional standing he was elected and served as Chairman of the Obstetrical and Gynecological Section of the American Medical Association. He was an honorary member of

the Miami Obstetrical and Gynecological Society; the South Carolina Obstetrical and Gynecological Society; and the Virgin Obstetrical and Gynecological Society.

Dr. Douglass, during his many years of professional life as Professor of Obstetrics and Head of the Department of Obstetrics at the University of Maryland School of Medicine, was always available for help and advice. He taught thousands of students; he guided many through their period of hospital training; he gave advice and consultation freely to many of his colleagues; and he was exemplary in conduct to set the standards of professional life and practice. Dr. Douglass always accepted his obligations without protest and his honors with humility. He never sought praise, but attracted men by his simple manner, kindly consideration, and sincere interest in all human beings, regardless of their race, color, or creed. His ideals of obstetrics and of life itself will long survive in the lives of his students.

*"There all the Learn'd shall at the
labour stand,
And Douglass lent his soft, obstetric
hand."*

—ALEXANDER POPE

HUGH B. McNALLY, M.D.
ISADORE A. SIEGEL, M.D.
D. McCLELLAND DIXON, M.D.
D. FRANK KALTREIDER, M.D.

William Royal Stokes

FRANK W. HACHTEL, M.D.

WILLIAM ROYAL STOKES might well be considered as one of the nation's medical pioneers and martyrs. Indeed, while working on the disease psittacosis, he met an untimely death. Dr. Frank W. Hachtel, the author of this brief biography, was a personal friend of Dr. Stokes, and it is therefore most appropriate that Dr. Hachtel contribute this brief account of the man and his contributions. Dr. Hachtel is Professor Emeritus of Bacteriology.—EDITOR.



DR. WILLIAM ROYAL STOKES, a distinguished alumnus (1891) of the University of Maryland School of Medicine, combined the practice of two professions with the cultivation of many diversions to the living of a full and satisfying life.

Born in 1870 of a family long resident in Maryland—one of his forbears laid out the town of Havre de Grace—he attended Deichmann's School. After completion of his preliminary education, Dr. Stokes studied medicine at the University of Maryland and was graduated in 1891. The next two years were spent in postgraduate work at the Johns Hopkins School of Medicine in pathology and histology. He then went to Boston to specialize in pathology under Dr. William T. Councilman at the Harvard Medical School. At the same time he served as Resident Pathologist at the Boston City Hospital, where he was associated with Dr. J. Homer Wright.

On completion of his studies in Boston, Dr. Stokes returned to Baltimore to enter upon his life work—his two professions—public health and teaching. Thus in 1896 he was appointed Director of the Department of Bacteriology of the Health Department of Baltimore City

and continued in this position until his untimely death. Also from 1898 to 1920, he served as Director of Bacteriology of the Maryland State Board of Health. He gave of his life to the fullest in these positions. In both, indeed, he organized, directed, and stimulated the growth of departments that soon were recognized as among the best in the country.

At first much of the routine of the laboratory fell to the Director, but in spite of this Dr. Stokes was able to carry on investigations in the fields of public health, pathology, and bacteriology. Some of these were of prime importance and had great influence on the health of the citizens of Baltimore; indeed, to no small degree does the City owe the institution of water purification, pasteurization of milk, and the proper disposal of sewage to these and similar researches. Under Dr. Stokes, these laboratories were efficiently directed and run with great smoothness: results that were largely due to his nature and personality. In the course of his life as a civil servant, Dr. Stokes displayed not only dedication to his work but great courage, physical and moral, and it was

in line of duty that he contracted his fatal illness—psittacosis.

Again, immediately upon his return from Boston he began his other career. After teaching pathology and bacteriology in several medical schools including the University of Maryland, in 1900 Dr. Stokes became Professor of Pathology and Bacteriology at the College of Physicians and Surgeons and retained that position until the merger of this college with the University of Maryland School of Medicine. Thereafter, from 1916 to 1930, he occupied the Chair of Bacteriology in the School of Medicine of the University of Maryland. He was an excellent and effective teacher and was able to arouse the interest of the student. His lectures were well prepared and delivered in a manner that was easy and, at the same time, stimulating.

In recognition of his attainments both as a public health officer and as a teacher and investigator, Dr. Stokes had conferred on him the honorary degree of Doctor of Science by Washington College in 1910.

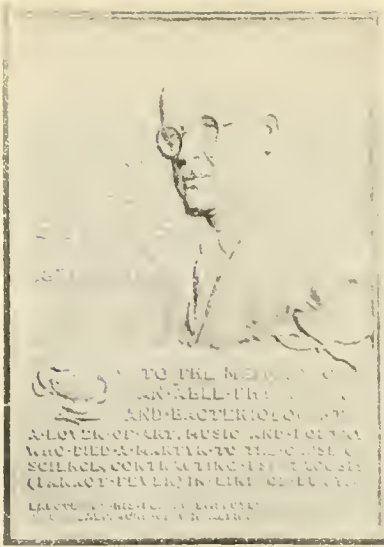
Dr. Stokes' sources of diversion were many and ranged from oyster roasts and crab feasts to opera and symphony concerts. He enjoyed all of these, each at its own level. Nor was his taste in oysters any more than his taste in music restricted. He also took a civilized delight in wining and dining and other amenities of life. His reading for pleasure was not confined to a single field; he could read fiction or philosophy, poetry or prose, history or biography with an equal enjoyment. Nor did he limit himself to any particular period in his reading. Indeed, to the marvel of his friends, he could read with apparent pleasure some of the earliest works of fiction that one usually looks upon as the private purview of professors of literature. His love of poetry

he retained throughout life and was himself an accomplished master of verse.

As a firm believer in the Juvenalian dictum: *mens sana in corpore sano*, Dr. Stokes for years after work would go to the Baltimore Athletic Club on his way home and enjoy active exercise. Furthermore, he took a great delight in walking. One remembers strolling up Charles Street with him from the Health Department and, on many fine Sunday afternoons, walking without purpose when such pedestrian pleasure was still possible: on such occasions discussing whatever for the moment seemed of interest. It was on such occasions one learned of the wide interests and knowledge of Dr. Stokes and appreciated his innate charm.

His ability as a scientist was early recognized by his fellow workers in public health and pathology. Nearly every year he presented papers, usually reporting some recent research to one or another of various scientific societies. Dr. Stokes was especially active in the Society of American Bacteriologists and the American Public Health Association and served—1909-1910—as Chairman of the Laboratory Section of the latter organization. He was one of the founders of the Research Society of the College of Physicians and Surgeons. He was assiduous in attendance of its meetings at which he presented a number of papers. Also, in 1908, Dr. Stokes was Secretary of the Section of Pathology of the Sixth International Conference on Tuberculosis which was held in Washington, D. C.

A few of his contributions to science and technology may be mentioned: "Hydrocyanic Gas in Public Health," "A Simple Test for the Detection of the Colon Bacillus in Water," "A Practical Method for the Disinfection of Sputum," "The Bacteriological Examination of



Soft Drinks," "Treatment of Baltimore Drinking Water With Calcium Hypochlorite," "Isolation of the Typhoid Bacillus From Milk Which Caused a Typhoid Outbreak," "The Microscopic Examination of Milk and the Pathology of Smallpox." His early work on *Blas-tomyces* seems never to have received the recognition it deserves.

Dr. Stokes was not infrequently called upon to make afterdinner speeches and addresses to graduating classes and on other occasions. These addresses always contained substance and were delivered with grace and charm, warmed and lightened with a lambent humor and wit.

Upon his death, a Committee was appointed by Dr. Charles Bagley, Jr., President of the Medical and Chirurgical Faculty of Maryland, to consider plans for a memorial to Dr. Stokes. This Committee decided to raise a fund to be presented to the Faculty, the income of which was to be expended for a memorial lectureship on Bacteriology and Pathology or for books on these and related subjects.

He was further honored by the Department of Health of Baltimore City by the dedication of a plaque in his memory. This was placed in the Municipal Office

Building in which are the offices and laboratories of the Department of Laboratories.

Dr. Stokes was a man of charm and integrity, a self-sacrificing public official, an able teacher who captured the interest and respect of his students, a scientist who gained the recognition of his colleagues, and a friend who won the devotion of all his intimates. Even his rather minor idiosyncracies were a source of attraction to his friends and students.

REMEMBER ME

When I have passed unto the bourne
Whence none return, pray do not mourn,
But think of me in steadfast faith
As being a carefree, happy wraith.

And would you my remembrance keep,
I'd have you smile instead of weep,
And think of days I spent with you
When sun was bright, and skies were blue.

Perhaps if you can find the time
Again to voice some tender rhyme
Which I have written, who can tell
But I may hear the words as well?

Forget the troubles that I had,
Forget the times when I was sad;
Remember but the part of me
That merry was, and light and free.

The legacy that I shall leave
Will only be a make-believe
That I am with you once again
To both repeat some old refrain.

Again to chant some chorus gay,
Or trill a merry roundelay,
To utter foolish quip and jest,
Or eat and drink with pagan zest.

To wander through the golden past,
All shackles cast away at last,
And once again to dream with you
The dream that never could come true.

—William Royal Stokes.

POSTGRADUATE COMMITTEE SECTION

PATRICK B. STOREY, M.D., *Chairman and Director*

ELIZABETH B. CARROLL, *Executive Secretary*

Postgraduate Office: Room 201

Davidge Hall, 522 West Lombard Street, Baltimore 1, Maryland

The courses to be offered during the 1961-62 school year were published in detail in the preceding issue of the BULLETIN. Briefly, these courses will be—

BASIC ELECTROCARDIOGRAPHY, November 2-3-4, 1961

NEUROPATHOLOGY FOR PATHOLOGISTS, November 13 through 17, 1961

ENDOCRINOLOGY AND METABOLISM, January 12-13, 1962

ADVANCES IN MEDICAL SCIENCE, Jan. 10 through May 16, 1962 (Wednesdays)

CLINICAL ANATOMY, January 29-May 21, 1962 (Mondays and Wednesdays)

CLINICAL CARDIOLOGY, February 1-2-3, 1962

HEMATOLOGY, March 8-9, 1962

Full information on these postgraduate courses may be obtained from the office of the Postgraduate Committee.

It is important to point out that these projected courses are only part of the School of Medicine's total effort in the postgraduate medical education sphere.

Two other aspects of particular significance are—

1. The regularly recurring visits of members of the Faculty of the Medical School to hospitals of the State of Maryland, and
2. The availability of instruction on an individual basis to any physician who wishes to develop a particular knowledge or skill.

This last aspect of the postgraduate program is perhaps not as well known as it should be. Suppose, for example, that a physician wished to learn indications for the contra-indications to a particular procedure and the technique of its utilization with the idea in mind that this might be a useful procedure to have available in his practice or in one of the hospitals outside of Baltimore; or let us say that a physician in practice wished to participate in a particular clinic or ward activity for a period of time. These are examples of postgraduate education on an individual basis, the practicality and the details of which might be worked out on specific inquiry to this office.

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President's Letter

Dear Fellow Alumni:

The United States now enjoys the best medical service in the world, and despite the imminence of current military emergencies, the only serious problem which one can anticipate is that the American doctor might be forced to increase his efforts as more men are called into the military.

With the rapid expansion of the nation's population, by 1970 a need for additional physicians to maintain these high standards of American medicine will have to be met. To this end, certain expansions in available medical educational facilities have already been made or are being planned. These additions do not completely solve the problem, for indeed, the proper conduct of an efficient, progressive, far-sighted program includes provision for the training of an increasing pool of specialists and for those who will devote their attention exclusively to research or teaching. The increasing military requirements obviously introduces some additional responsibility on existing facilities unless an increased effort from all physicians is forthcoming. Alumni of the School of Medicine may all play an active part in the solution of this problem and can materially assist in a number of ways. Contributions to the American Medical Education Foundation will serve an increasingly useful purpose to augment and round out the medical school budget. Participation in medical school activities as an instructor will materially assist the faculty in

ALUMNI ASSOCIATION SECTION

many ways. To provide for the best in medical education, the use of private hospital patients for the instruction of medical students, in addition to service cases, is most desirable. Finally, it is incumbent upon every alumnus to influence and direct capable and promising students toward the study of medicine.

The University of Maryland School of Medicine welcomes your assistance and your recommendations. If we are to meet this challenge, concerted action, increased effort, and unified cooperation by all is essential.

Sincerely,

FRANK K. MORRIS, M.D.,
President

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HIGHLIGHTS OF ALUMNI REUNION DAY, JUNE 8, 1961

IN ADDITION to reports already published in the July issue of the BULLETIN, we are happy to list those alumni who registered and were present on the annual reunion day.

Class of 1895
N. G. Wilson

Class of 1897
L. N. Glenn

Class of 1898
B. W. Fassett

Class of 1901
James A. McClung

Class of 1903
Edgar B. Friedenwald

Class of 1906
Walter D. Wise

Class of 1909
H. M. Robinson, Sr.

Class of 1910
John G. Runkel M. E. Shamer

Class of 1911
Lawrence F. Boland
Frank J. Broschart
William L. Byerly
R. C. Dodson
J. C. Frye
Wm. Thomas Gocke
Gustave A. Gorisse
E. S. Hamilton

Howard E. Harman
I. I. Hirschman
John F. Hogan, Sr.
Francis Hutchinson
F. L. Jennings
Kenneth B. Jones
C. Hutchison Keesor
Robert E. S. Kelley

Howard M. Kemp
Joseph B. Kilbourn
John B. Makin
Isidore Michel
Walter S. Niblett

Joseph Stomel
R. W. Trevaskis, Sr.
William H. Triplett
W. F. Zinn

Class of 1912
A. E. Goldstein

Class of 1913
C. Reid Edwards W. H. Toulson

Class of 1914
Austin H. Wood

Class of 1915
W. R. Johnson

Class of 1916
Charles R. Brooke
Charles A. Reifschneider

Class of 1917
H. Laurence Wheeler C. F. Worrell

Class of 1918
Thomas C. Speake

Class of 1921
Bruce Barnes
Herman J. Dorf
Albert Jaffe
D. F. Keegan
O. Costa Mandry

Thomas R. O'Rourke
Francis A. Reynolds
E. Martinez Rivera
Mortimer H. Williams

Dr. Emmanuel A. Schimunek, Class of '31, Dr.
Frank K. Morris, Class of '27, and Dr. Eugene I.
Baumgartner, Class of '31.

Dr. H. Laurence Wheeler, Class of '17.





Dr. Arthur G. Siwinski presents the Alumni Honor Award and Gold Key to Dr. Walter D. Wise, Class of 1906.



Dean William S. Stone congratulates Dr. Walter D. Wise.

Class of 1923

George A. Knipp

Class of 1924

Clewell Howell

Class of 1925

J. S. Eastland

Samuel S. Glick

Class of 1926

Margaret Ballard
Henry De Vincentis
H. Elias Diamond
C. W. Edmonds
Abel Gordon
David M. Helfond
Louis T. Lavy
H. Edmond Levin
Joseph Levin

Walter C. Merkel
Wm. C. Polsue
Jacob Schmuckler
Maurice L.
Teitelbaum
H. R. Tobias
Samuel Weinstein
Louis J. Weseley

Class of 1927

T. Nelson Carey
E. E. Covington

A. H. Finkelstein
Frank K. Morris

Class of 1928

C. G. Warner

Class of 1929

F. A. Clark

William J. Sullivan

Class of 1930

Archie Robert Cohen

Class of 1931

P. Adalman
Eugene I.
Baumgartner
K. L. Cloninger
Melvin Booth Davis
William C. Boggs
J. W. Edel
M. R. Hannum
K. M. Hornbrook
Frank H. Jaklitsch
Abraham Karger

J. L. Krieger
Michael Krosnoff
A. G. Lanham
Waldo B. Moyers
Manuel Rodriguez
Ema
Emmanuel A.
Schimunek
Arthur G. Siwinski
Michael Skovron
Alex. Slavcoff

Class of 1932

Robert Rubenstein

Class of 1933

L. L. Keown

Class of 1934

Jules Cooper

John N. Snyder

Class of 1935

E. I. Cornbrooks, Jr.
H. M. Robinson, Jr.
Edward F. Cotter

Wm. G. Helfrich
C. V. Williamson
Howard B. Mays

Class of 1936

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Irving Burka
Harold H. Burns
George J. Coplin
Darius M. Dixon
Jerome Feldman
Jesse W. Gordner, Jr.
Marion H. Gillis
Wm. Griefinger
Jaye J. Grollman
Benj. H. Isaacs
C. Henry Jones
W. E. Karfgin
Saul Karpel
Eugene R. McNinch

Joseph R. Myerowitz
Morris J. Nicholson
William F. Park
Salvador D. Pentecost
David M. Spain
Millard F. Squires
Milton H. Stapen
Morris H. Stern
Stuart D. Sunday
Isaac Terr
L. M. Tierney
W. Kennedy Waller
Jacob J. Weinstein
Gibson J. Wells
Joseph G. Zimring

Class of 1937

Samuel T. R. Revell, Jr.

Class of 1938

Melvin N. Borden
Sidney Scherlis
John A. Wagner

C. Gardner Warner
Theodore E.
Woodward

Class of 1939

J. N. Cianos
R. M. Cunningham

Thomas L.
Worsley, Jr.

Class of 1940

James R. Karns

Class of 1941

Aurora F. Alberto
Pierson M. Checkat
LeRoy G. Cooper
M. L. DeVincintis

Jose S. Licha
Irene Phrydas
Charles Prunitt
Joseph Sheehan

L. A. Wall Edwin F. Wilson
Dayton O. Watkins John D. Young, Jr.

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J. Howard Franz Theodore Kardash
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Leonard H. Flax W. P. Templeton

Class of 1954

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Class of 1956

Kress Scheldon Robert L. Wright

Class of 1959

Howard J. Rubenstein, Sr.

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William Fleming Nina Vann
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Medicine and Foreign Aid

WALSH McDERMOTT, M.D.

DR. HORNBAKE, DEAN STONE, Members of the Class of 1961, ladies and gentlemen:

At the outset may I offer my congratulation to the new physicians on this ceremonial occasion.

Ceremonies, when they are genuine ones like today's, are not to be derided, for they are a public avowal that this particular moment in one's life is of importance. Some of you are moved by this fact today, and I can tell you that we teachers are likewise always moved on this occasion. And, those of you who do not feel particularly different today from any other day may get whatever comfort that you can from the thought that you are making a wise long-term investment. For ceremonies, like certain sins, may not always live up to expectations at the time, but their recollection makes fine stuff with which to warm oneself in later years.

Unfortunately, however, on this occasion as on so many others, with the ceremony there goes a speech.

And, here it is.

The awful thought occurred to me that among you today might be a nonconformist soul or two who, having just officially gotten into the medical profession, was starting to look around wondering how to get out.

This happens as a matter of course in law and engineering, yet it is rare in our

country to encounter an ex-physician. Presumably there are several reasons why this should be so. The one I suspect is closest to the truth is that to a truly remarkable extent Medicine in our country has found the happy formula to accommodate men and women of a wide variety of interests in the expression of their individuality. In short, you can do just about anything you wish to these days and never leave the official confines of the medical profession.

This coin has its other side too, and it is, as we all know, the widespread public feeling that a lot of things we never thought were our proper business have become our business. Everything from slum clearance to automobile exhaust is getting involved with Medicine and now we are beginning to be hotly sought after for the International Field. And it is this aspect of our medical scene that I wish to discuss today.

It is especially appropriate that this be done here and on this day because of the long tradition of leadership that Maryland has shown in this field.

In a sense, Dr. Woodward and I both started in this type of work some years ago and developed our own formula for handling a problem that will plague you from tomorrow till the day you die, namely, how to keep up with the constantly expanding body of complex medical knowledge. Like all great discoveries our formula was quite simple. Instead of burdening ourselves with new medical information which can get quite hard to

Precommencement Address to the Class of 1961, School of Medicine, in the Health Sciences Library, June 9, 1961.

understand, we merely learned the elementary facts about a few diseases such as typhoid fever. Then as the disease gets driven out of one country, we simply follow it to another, very much the way the touring golf professionals follow the sun. I feel quite safe in revealing our formula because it has obviously had its day. And, it is certainly a far cry from the very carefully planned medical research center the University of Maryland is starting at Lahore in West Pakistan.

In actuality, the progressive involvement of Medicine in our Foreign Aid program is not at all farfetched because *health, agriculture, and education* represent the three major components of any technical assistance program. The difficulty with modern Medicine in technical assistance is that it is too easy.

By this I mean that unlike education or agriculture, modern medicine can be introduced to a primitive society so easily that it is difficult to control. Things can rapidly get out of hand and serious conflicts arise with the medical ethic to which you have this day so solemnly subscribed.

Let us examine the steps by which the disease pattern of a primitive society is changed to one like our own.

I use the terms *disease patterns* rather than *health status* because the latter carries the erroneous implication that health is the absence of disease. In reality, all societies including our own are disease-ridden; it is merely the patterns of disease that are different.

Obviously, a disease pattern in which people, after a productive life, die of cancer or coronary heart disease is preferable to one in which the infants die of diarrhea and the adolescents of tuberculosis. By what steps is this transformation brought about? In crude terms, there are four such steps.

The first step, and perhaps the biggest one in terms of results, comes about as a consequence of innovations that are not really medical at all.

This is the so-called social overhead capital—the building of a railroad in India allowed grain to be shifted around in times of localized famines. The building of a dam, the cutting of a road through the jungle, the installation of a telephone line, all can have very pronounced effects on the health of the people in the affected villages.

The second step is likewise essentially non-personal and consists of such activities as the use of residual DDT sprays on village dwellings for malaria control or perhaps a central clean water supply for the village.

So far so good. If we could just leave it at that while the other two components of technical assistance—agricultural change and the introduction of elementary education—were having their slow but long term effects, it is probable that everybody might be better off. Our problem stems from the fact that we cannot just “leave it at that” because of our medical ethic. Instead we must push on to the other two steps: The delivery of medical services on an individualized basis; and the development of a cadre of indigenous medical scientists to train first-class physicians and other medical personnel.

Now we are really in trouble, because our process of innovation is involving us *with people as individuals* and we all know that individuals are ornery.

It is this fourth step—the development of a cadre of indigenous medical scientists that I believe will represent the great contribution to our Foreign Aid program by the Maryland medical research centers at Lahore and here in Baltimore. This is not to say that this will be the

only contribution of the new Maryland enterprise—for it should make a fine contribution to our total medical knowledge by the results of its research. In terms just of our Development Assistance program, however, it is in the development of the indigenous scientists and the creation of a system in which they can continue to work productively, that will be the great contribution of the many departments of this medical school.

With respect to the trouble caused by people mentioned a moment ago—the Maryland group will have their problems but they will not even approach the order of magnitude of the problems involved in the third step—namely the delivery of medical services. Moreover, the group here are thoroughly experienced in overseas work and have a carefully developed plan. Although they will certainly have their troubles—they can predict right now what most of them will be, and I suspect they will have few surprises.

The situation is quite different for those involved in the third step of providing medical services on an individualized basis. Here there is all sorts of trouble in store and much of it is wholly unpredictable.

You might well ask—Is it really necessary that we take this third step that is so fraught with difficulties and potential harm as well as good? Could we not settle for the improved roads and transport and the DDT-type programs and let the rest go until the supply of indigenous medical personnel has been developed in sufficient numbers to take over? Again, this might well be the ideal way to proceed, but as with certain matters involving the medical ethic, it becomes virtually impossible to draw the line.

Thus, if a physician is in a village on any type of program, for example, to administer diphtheria immunization, it is

impossible for him to ignore the child with meningococcal meningitis and if he has any sulfonamide with him, he will administer it.

This is where modern medicine becomes such a two-edged sword.

On the one hand, the miracle performed on the meningitis by the sulfonamide is the very sort of thing needed to get village cooperation in the diphtheria immunization program. On the other hand to show mothers that critically ill children do not necessarily have to die and then to withdraw that medical service is to perform an act of great cruelty.

How do we manage this latter day "Doctors dilemma?"

Another danger from the ease with which modern medicine can be introduced is the creation of the worst type of passive recipient or "welfare state" form of community attitude. This, of course, is completely self-defeating in terms of the goal of development assistance. Let me illustrate how this can happen.

Deeply engrained in our own culture is the concept that each of us is responsible in a considerable degree to what happens to his health.

"I didn't wear my rubbers," "I shouldn't have eaten that hot dog," "He let himself get badly overtired," are all part of our everyday speech.

Yet in many cultures—particularly tribal cultures—illness is regarded as something for which the stricken person has absolutely no responsibility at all. It is a matter of an act of the Gods—so to speak.

How can we develop ways to transfer this sense of personal responsibility for one's health on which so much of our most modern medicine depends?

Unless we can develop ways to do this,

the temptation is irresistible to the physician to simply give "shots" to all who seem to need medical care. Thus we merely implant the worst feature of our medical culture in the indigenous culture and create a passive recipient mentality in the process.

Finally, in this only partial list of unsolved problems is the one having to do with *disease prevention* by individual action.

We hear that the people must be educated, that dirt is bad, etc. This implies that we adopted and maintain our own personal hygienic practices for reasons of health—but do we? Do we take frequent baths because it is good for our health or because it has become socially unacceptable to give off too strong odors? Did we stop eating off the floor because it was unsanitary or because we had abundant wood for furniture and it is more comfortable to sit at a table?

Expressed differently—in large measure our personal hygienic practices—really habits—were developed in a setting of the great change from the log cabin to the ranch type home. How can a similar change in personal habits be accomplished by people who of necessity will have to go right on living in the same mud hut?

* * *

I mention these problems not because I am against Development Assistance, but because I am strongly for it.

Yet with Medicine—Development Assistance is a two-edged sword that *we do not yet know how to wield*.

And, power exercised in ignorance always carries with it the chance of doing harm as well as good.

How should we proceed? The obvious way is to attempt to obtain the information we do not now have. In other words organize a systematic program of re-

search aimed at finding and solving the problems now standing in the way of successful Development Assistance. Not research just in Medicine—but research across the board. The proposal that such a program be started immediately is incorporated in the Foreign Aid Reorganization Act now before our Congress for its consideration.

It is not visualized that research programs be set up in fields well covered right now by groups such as the National Science Foundation or the National Institutes of Health. But much of the needed research—even in the Health Field—is of a sort that tends to fall between the conventional boundaries of orthodox research programs and it is this sort of research that it is sought to develop.

Let me emphasize particularly that the National Institutes of Health International Medical Research Center Program of which Maryland is a charter member—is designed to do something quite different from the type of research effort I am now talking about. Whether the Baltimore-Lahore group chooses to get into this other field of research as well is up to them to decide. The point I am making is that it is not a part of the responsibility they have assumed to do so. Their great contribution to Development Assistance will come another way.

The kinds of research visualized in the proposed new program are of four general categories:

1. Identification and modification of the forces in a society that tend to block successful Development Assistance. In Medicine—some of the questions I posed earlier are in this category.

2. Unanswered scientific questions that history has by-passed in our society but persist as obstacles to modernization elsewhere. In Medicine—infant diarrhea is a case in point. We have controlled it

in our society without really understanding it.

3. The simplification and adaptation of technologies to fit the facts of life in the less developed countries. In Medicine, we cannot really simplify the technology—there is no point in trying to develop a crude penicillin, for example, but what we can do is to adapt and simplify who *delivers* the technology.

4. Basic research in natural sciences to develop scientific cadre in the developing countries. In Medicine, this is the area in which the Maryland group is working.

* * *

Let me say two things about research. *First:* In any period of bursting scientific achievement, it is easy to develop the illusion that any problem, no matter how complicated, can be solved if it is only subjected to research. Some problems can't be solved but all we can do is to try, and many of the problems of development assistance *are* potentially solvable.

Second: On this day when many of you are leaving the medical research environment for the world of clinical practice, it is appropriate for me to give my own view as to how the two worlds compare. I have operated in both worlds and as far as I am concerned, they are quite equal in terms of the intellectual demands

they make on one and the intellectual thrills and satisfactions they bring. In short, neither world is intrinsically more admirable or more praiseworthy than the other. The choice between them is a matter of taste and there is plenty of room in Medicine for them both.

* * *

I have chosen to talk today on Medicine in Foreign Aid not so much because many of you will actually be working overseas but because the subject is getting to be one of the large medical issues of our times and we must all take professional positions on it.

If we proceed in ignorance to induce change, we run the risk of doing harm; yet we must proceed. Some change is inescapable and the people none-the-less survive. Many a kitchen in Detroit or Sparrow's Point has reverberated to the 16-year-old girl's anguished cry, "Momma, we're not in Poland now;" yet as a nation we have all managed this problem somehow.

What we must do is to cut down the angle of error by learning as much as we can; and in Medicine, as with any other form of foreign assistance, be guided at all times by a thought paraphrased from Mr. George Kennan: "The pace of technologic development must never be so rapid that a father's whole experience is totally without meaning for his son."



Dr. Page C. Jett and Dr. Waldo B. Moyers, Class of '31 and Dr. Joseph Nataro, Sr., Class of '25.

A.M.A. Luncheon A Success

A LARGE NUMBER of alumni gathered informally at the Hotel Barbizon-Plaza in New York on the occasion of the annual meeting of the American Medical Association. After an informal social hour, luncheon followed. There were many informal exchanges. A short address was given by Dr. William S. Stone, Dean. Dr. Stone described many of the projects and developments now taking place in the School of Medicine.

In addition to the alumni, Mr. William B. Weglicki, national president of the Student American Medical Association and a member of the Class of 1962, was a special guest of the Association.

The following alumni registered:

DEAN WILLIAM S. STONE, Baltimore, Md.
 DR. R. M. ATKINS, Baltimore, Md.
 DR. CHARLES H. AUDET, JR., Waterbury, Conn.
 DR. HERBERT BERGER, Staten Island, N. Y.
 DR. LEO T. BROWN, Washington, D. C.
 DR. AND MRS. JESSE C. COGGINS, Laurel, Md.
 DR. ROBERT H. DREHER, Wind Gap, Pa.
 DR. FRANK H. J. FIGGE, Baltimore, Md.
 DR. S. EVANS GANZ, New York, N. Y.
 DR. ALBERT E. GOLDSTEIN, Baltimore, Md.
 DR. B. H. GROWT, Addison, Mich.
 DR. H. WILLIAM GRAY, Washington, D. C.
 DR. F. ROBERT HAASE, Asbury Park, N. J.
 DR. G. KENNETH HAWKINS, Glen Ridge, N. J.
 DR. WILLIAM M. HEADLEY, Augusta, Ga.
 DR. PAGE JETT, Prince Frederick, Md.
 DR. JACK A. KAPLAND, New York, N. Y.
 DR. WILLIAM S. M. LING, New York, N. Y.
 DR. HOWARD B. MAYS AND MRS. MAYS, Baltimore, Md.
 DR. AARON H. MEISTER, Jamaica, L. I., N. Y.
 DR. JOHN J. MELI, Naples, Fla.
 DR. WALDO B. MOYERS, Hyattsville, Md.
 DR. JOSEPH NATARO, SR., So. Orange, N. J.
 DR. JULIO T. NOGUERA, Asbury Park, N. J.
 DR. ARTHUR E. POLLOCK, Altoona, Pa.
 DR. LOUIS J. PRATT, Towson, Md.
 DR. AND MRS. R. C. V. ROBINSON, Baltimore, Md.
 DR. EMMANUEL SCHIMUNEK, Baltimore, Md.
 DR. JOHN A. WAGNER, Baltimore, Md.
 DR. HENRY WEISS, Ellenville, N. Y.
 DR. ALEXANDER YOUNG, New York, N. Y.
 MRS. WM. B. GIRKIN, Executive Secretary, Medical Alumni Association
 Special Guest—WILLIAM B. WEGLICKI, National president of SAMA—a member of the 1962 class of U. of Md. Medical School

Dr. and Mrs. Jessie C. Coggins, Laurel, Md.



Class

NOTES

ELSEWHERE in this edition you will find a "tear out" page, for reporting Alumni News to the BULLETIN. This is not an idle gesture.

Your achievements, fellow alumnus, are of interest to your classmates. They constitute a reward to the faculty, are a challenge to the younger physicians, and are an item of prestige for the University. Please cooperate with us by forwarding news of yourself or any alumnus to the BULLETIN. Thank you.

P & S 1884

James Meigs Flippin of Pilot Mountain, N. C., died January 11, 1961. Dr. Flippin was 97.

Class of 1884

R. W. Barton writes from San Angelo, Texas requesting that the BULLETIN inform his friends among the alumni of the very serious reverses he has suffered through recent floods and the serious illness of his wife, and of his great need of any friendly assistance that may be offered him.

Class of 1892

Francis J. Kirby of Baltimore, Md., died June 24, 1961. Dr. Kirby was 95.

P & S 1893

Robert B. Bacon of 5001 28 Ave., North, St. Petersburg, Fla., died January 24, 1961. Dr. Bacon was 88.

P & S 1896

Edward L. Hoffman of 1001 Northampton St., Easton, Pa., died January 21, 1961. Dr. Hoffman was 92.

B. M. C. 1897

L. John Merritt of Walden, N. Y., died December 29, 1960. Dr. Merritt was 88.

P & S 1898

John Henry Kearney of 80 Wallace Ave., Fitchburg, Mass., died December 30, 1960. He was 88.

B. M. C. 1901

Harry Eugene Anthony of Moravia, N. Y., died April 6, 1961.

P & S 1901

Everet M. Percy of 245 Maple Ave., Clarksburg, W. Va., died November 21, 1960. Dr. Percy was 85.

B. M. C. 1903

George McVey Beatty of Chicora, Pa., died January 30, 1961. Dr. Beatty was 82.

Class of 1903

Archer Anderson Wingrove of Scarboro, W. Va., died May 21, 1961. Dr. Wingrove was 84.

Class of 1904

Meyer Aaronson of 155 5th Ave., Los Angeles, Calif., died recently.

D. C. Mock of 215 Cajon St., Redlands, Calif., was omitted from the list of 50-year honor graduates at the time the certificates were distributed in 1954.

Recently, Dr. William H. Triplett, Executive Secretary of the Alumni Association, located Dr. Mock, now retired for five years, and who says, "I am glad to state that I am enjoying very good health for my years. I play 18 holes of golf three times a week, and while my game isn't good, I'm getting good exercise and pleasant companionship. . . ."

P & S 1905

Robert Wriston of Beckley, W. Va., died May 20, 1961. Dr. Wriston was 81.

Class of 1905

Julian W. Ashby of Raleigh, N. C., died December 3, 1960 at the age of 83.

Harry D. McCarty died on June 14, 1961, having practiced in the Baltimore area for over 52 years. He was 79 years old.

Following graduation from the School of Medicine, he became interested in the specialty of Neurology, and he served for a period as Instructor in Neurology at the Johns Hopkins University. In addition, he taught Physical Diagnosis at Johns Hopkins and at the University of Maryland. From 1915 to 1928 he served as Associate Professor of Medicine at the University of Maryland and also as head of the tuberculosis section of the Baltimore City Hospitals.

Dr. McCarty was a member of the American Medical Association and of the Medical and Chirurgical Faculty of Maryland.

B. M. C. 1908

Scott J. Titus, Jeffrson, Pa., died recently.

B. M. C. 1909

Allen Graham of Melrose, Fla., died February 25, 1961. Dr. Graham was 74.

Class of 1909

Charles I. Benson of Port Deposit, Md., was honored by the community on the occasion of the 50th anniversary of his practice in the community of Port Deposit and Perryville, Md.

At a reception and open house held on July 2, Dr. Benson was visited by members of the community "to show our warm regard for Dr. Benson as well as our appreciation of his work." Dr.

Harry M. Robinson, Sr., a member of the Class of 1909, spoke briefly at the ceremonies.

Hugh W. Smeltzer of Greendale, Va., died February 1, 1961. Dr. Smeltzer was 81.

B. M. C. 1910

H. C. Kincaid of Arlington, Va., died March 31, 1961.

Class of 1911

Louis H. Douglass, Professor of Obstetrics Emeritus of the School of Medicine and prominent alumnus, died at his home, Mt. Custis, Accomac, Va., on July 23, 1961.

John Thomas Howell of Florence, S. C., died recently.

Charles Edward Kernodle of Elon College, N. C., died recently.

William Clinton Maret of Seneca, S. C., died recently.

Class of 1912

William Thomas Chipman of Harrington, Del., died February 25, 1961.

Class of 1913

Francis F. Callahan of St. Paul, Minn., died April 6, 1961.

Class of 1915

Carlos Gonzales of 61 Pinero St., Rio Piedras, Puerto Rico, died January 18, 1961.

Class of 1916

James Eric Cudd of 106½ W. Main St., Spartanburg, S. C., died recently.

Jacob Henry Matthai of 101 S. Center St., Cumberland, Md., died in 1953.

Memorial Scholarship Fund

Through the generosity of six members of the Class of 1916, a Memorial

ALUMNI ASSOCIATION SECTION

Scholarship Fund has been established under the auspices of the trustees of the Endowment Fund of the University of Maryland. This memorial scholarship will be established for loan purposes.

In announcing the scholarship, Dr. Everett S. Diggs, Secretary-Treasurer of the trustees, stated that other members of the Class of 1916 or other alumni interested in the scholarship funds might wish to augment the 1916 fund. Such contributions would be most welcome and should be sent to Dr. Diggs at 11 East Chase Street, Baltimore 2, Md., the contribution being made payable to the Trustees of the Endowment Fund, University of Maryland.

The members of the Class of 1916 who have established the fund include Drs. Frank Marino, B. B. Brumbaugh, F. F. Ruzicka, George A. Bawden, Edward H. Benson, and C. A. Reifschneider. Rules for the conduct of the fund are appended below.

RULES AND REGULATIONS

1. The Memorial Scholarship Fund of the Class of 1916 is established by the members of this class to honor its deceased members.

2. The fund shall be under the Board of Trustees of the Endowment Fund of the University of Maryland which Board shall determine the manner in which monies received into this fund shall be invested.

3. The purpose of this fund shall be to provide a loan fund for the benefit of needy students of the University of Maryland School of Medicine.

4. Applicants shall apply to the Scholarship and Loan Committee of the University of Maryland School of Medicine, which committee shall, after investigation and approval, recommend to the Board of Trustees of the Endowment Fund the student to whom the loan is to be made and the amount of the loan.

5. Applications will be considered by the Board of Trustees and after approval by the Board the amount will be forwarded by the Secretary-Treasurer to the School of Medicine for the use of the student provided, however,

in every case the decision of the Trustees as to whether any such loan shall or shall not be made shall be final and conclusive.

6. Until such time as the principal has attained \$5,000.00, neither principal nor interest shall be used; after the principal is in the amount of \$5,000.00, both the principal and interest may be used for loan purposes.

7. Loans shall be made in the amount recommended by the Scholarship and Loan Committee but shall not be in excess of \$500.00 per student per school year.

8. Interest shall be paid by the recipient of the loan to the Scholarship and Loan Committee which committee shall in turn forward the interest to the Board of Trustees of the Endowment Fund for further investment and dispersal.

9. Interest shall be at the rate of 25% per annum until one year after completion of the recipient's educational program, including his hospital house officer training, after which time the loan is repayable within five years and during which five years the interest rate shall be 4% per annum.

Class of 1917

William C. Williams of Hillsville, Va., died recently.

Class of 1923

Dewey Lynwood Fleshman of Bassett, Va., died January 1, 1961. Dr. Fleshman was 61.

Abram A. Sussman of 3101 N. Charles St., Baltimore, died on June 29, 1961.

Medical School's First "Co-ed" Dies

DR. THERESA ORA SNAITH of the Class of 1923, who for many years practiced in Weston, West Virginia, died on June 12, 1961 of leukemia. Dr. Snaith was 63. She held the distinction of being the first woman graduated in Medicine from the University of Maryland.

Class of 1924

Carlton A. Davenport of Hertford, N. C., died recently.

Albert Scagnetti of 3741 Lochearn Drive, Baltimore, died May 25, 1961.

Class of 1927

James Swank of 210 E. Charleston Blvd., Las Vegas, Nev., died May 15, 1961.

Class of 1931

Philip F. Lerner has announced the removal of his office for the practice of Neurology and Psychiatry to the Latrobe Building, 2 E. Read St., Baltimore 2, Md.

Class of 1932

J. George Diamond of 1125 Park Ave., Plainfield, N. J., was recently elected Chief of the Department of General Practice at the Muhlenberg Hospital in Plainfield.

Class of 1933

George Matheke of 555 William St., East Orange, N. J., died April 30, 1961.

Class of 1935

Milton Adelman is serving as Chief of the Department of Anesthesiology of the Mt. Sinai Hospital in New York City.

Class of 1936

Eugene R. McNinch, who is President of the Delaware State Board of Health, recently presided at the dedication ceremonies of the new State Health Building at Dover, Del.

Class of 1938

Milton A. Katz, who practiced pediatrics in the Lakewood region, near Los Angeles, and a former resident of Westminster, Md., died July 27 at the University of California Medical Center. Death occurred following a series of surgical procedures which had been performed for recurrent renal calculi.

Milton was born in 1913 in Harrisburg, Pa. Later the family moved to Westminster, Md., where he spent his

boyhood and youth. Following graduation from the Westminster High School, he attended Western Maryland College in 1931 and 1932, St. John's College, Annapolis, Md., 1933 and 1934, from which institution he received his Bachelor's Degree.

Dr. Katz entered medical school in 1934 and graduated in 1938. His classmates regarded him as a serious and scholarly student. He was modest and very thorough in all of his undertakings, including the careful handling of patients under his care. This attribute he carried to his internship and throughout medical practice. His house officership was served at the St. Joseph's Hospital, Lancaster, Pa., following which he entered the practice of Medicine in Westminster in 1939. While practicing in Carroll County, he was a member of the Staff of the Maryland General Hospital in Baltimore.

Because of ill health, primarily caused by asthma and eczema, he followed medical advice and moved west in 1945. Dr. Katz established a practice in Long Beach, Calif., and soon restricted his work to Pediatrics. His eminent success is attested by the fact that his associates elevated him to the presidency of the Long Beach Pediatric Society on two occasions. He was a Staff member of the Memorial, Community, and St. Mary's Hospitals, and in 1948 served as President of the Long Beach Children's Clinic. For 15 years he rendered unstinting service as a member of the Board of Directors of this Clinic. With all of his heavy responsibilities, Dr. Katz found time to remain active in various medical societies, including the American Medical Association, the California Medical Association, the Los Angeles County Medical Association, the Los Angeles County Pediatric Association, and the Long Beach Pediatric Association.

ALUMNI ASSOCIATION SECTION

Young medical house officers benefited through his active participation in various hospital programs concerned with their welfare and training. Various civic activities received his tireless attention. He was Charter President of the Long Beach Harbor Professional Group in 1951, President of the Temple Israel Brotherhood in 1947, member of the Scottish Rite and El Bekal Shrine. At the time of his death he served as Senior Deacon of the Five Points Lodge No. 779, A.F.&A.M. For three years he headed the Polio Immunization Committee of the Long Beach District of the Los Angeles County Medical Association.

With Dr. Katz' death, the Long Beach community lost one of its loyal and devoted physicians; the School of Medicine, a dedicated graduate; his family, a loving husband and father; and the writer, a warm friend. To his wife, Mrs. Carlyn G. Katz, and to his two children, Mrs. Ned Averbuck and Treuman Katz, and to his mother, Mrs. Joseph Katz, who survive him, the School tenders its sincere sympathy.

THEODORE E. WOODWARD, M.D.

Class of 1944

Robert B. Buckey of Imola, Calif., died January 3, 1961. Dr. Buckey was 45.

Class of 1948

John V. Bullock has recently completed his Residency in Medicine at the

Medical College of Virginia Hospital. Dr. Bullock lives at 2019 Monument Ave., Richmond 20, Va.

Class of 1950

George H. Greenstein is engaged in the practice of orthopedic surgery at 2500 Eutaw Place in Baltimore.

Class of 1954

Arthur Baitech has announced his association with Dr. George H. Greenstein for the practice of orthopedic surgery at 2500 Eutaw Place in Baltimore.

Class of 1955

Herbert L. Yousem has announced his affiliation with Dr. Paul C. Weinberg in the practice of Obstetrics and Gynecology, with offices at 2525 Eutaw Place in Baltimore.

Class of 1956

George A. Abeshouse has announced the opening of his office for the practice of genito-urinary surgery at 100 W. Monument St. in Baltimore.

James W. Skaggs, Jr., having completed his tour of duty with the U. S. Air Force, is now engaged in the general practice of medicine at 1353 Greenwood Cliff, Charlotte 3, N. C.

Class of 1957

Herbert H. Nasdor has announced the opening of his office for the practice of Obstetrics and Gynecology at 206 E. Biddle St., Baltimore 2, Md.



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PLEASE TEAR OUT

ALUMNI NEWS REPORT

TO THE BULLETIN:

I would like to report the following:

TEAR OUT

SUGGESTIONS FOR NEWS ITEMS

American Board Certification
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Academic Appointment
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